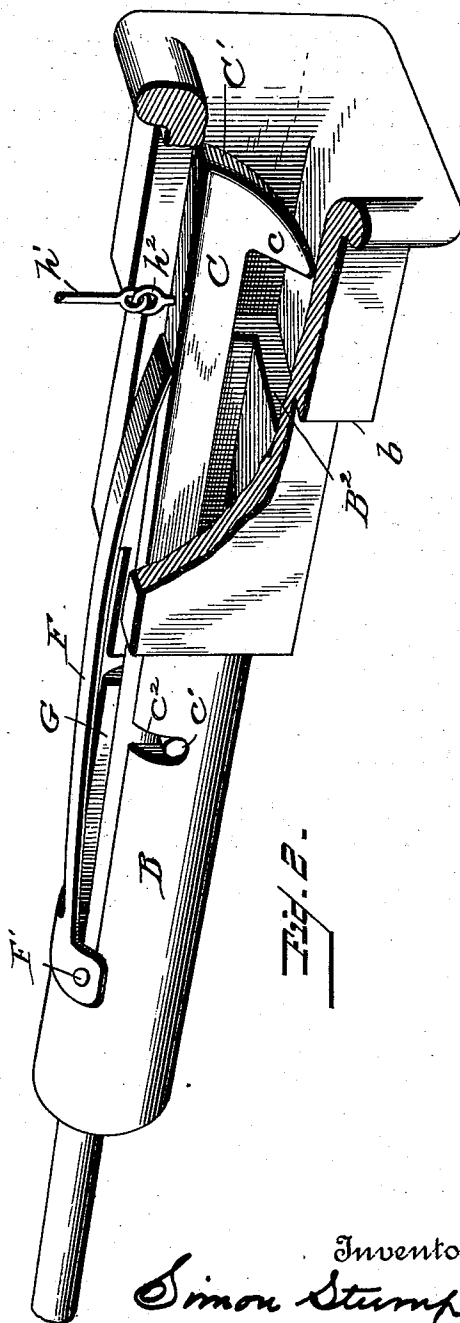
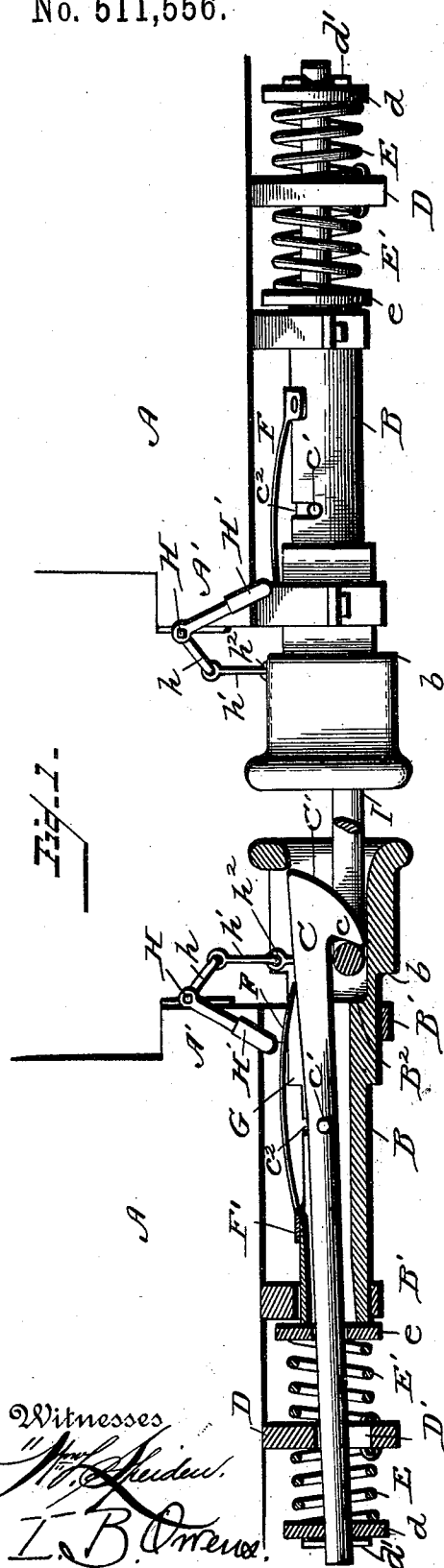


(No Model.)

S. STUMP.
CAR COUPLING.

No. 511,556.

Patented Dec. 26, 1893.



By Attorneys
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UNITED STATES PATENT OFFICE.

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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 511,556, dated December 26, 1893.

Application filed June 2, 1893. Serial No. 476,371. (No model.)

To all whom it may concern:

Be it known that I, SIMON STUMP, a citizen of the United States, residing at Great Bend, in the county of Susquehanna and State of Pennsylvania, have invented certain new and useful Improvements in Car-Couplers; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to an improved car-coupling, and it has special reference to that class in which a pair of pivoted or swinging hooks co-operate with a link to connect the cars, and my object is to produce a coupler having a combined hook and draw-bar and one in which the hook may be easily and effectively operated in spite of the two-fold character of its function.

To these ends my invention consists of the peculiar construction and arrangement of the hook and its attached parts.

It also consists of certain peculiarities of construction and combinations of parts throughout the coupler, all of which will now be fully disclosed and finally embodied in the claim.

Referring to the accompanying drawings, which illustrate my coupler applied as in practical embodiment: Figure 1 represents a side elevation partly in section, showing the parts coupled; Fig. 2 a perspective view of the draw-head detached and partly broken away to disclose the hook.

The reference letters A, A indicate the contiguous ends of the cars to be coupled, which may be of any pattern or class, and each provided with the platform A'. To each of these cars, one section of the coupler is attached. As each section is an exact duplicate of the other, only one will be described in detail.

B indicates the draw-head which is arranged within the stirrups B' so as to be capable of limited longitudinal movement therein, a shoulder b being formed near the outer end of the mouth of the draw-head to prevent the same from being pushed under the car, while excessive outward movement is

prevented by the peculiar arrangement of the hook, which will hereinafter appear in detail.

C represents the hook which is provided at the hook proper, its forward end, with a beveled face C' inclined rearwardly and downwardly so as to glance the incoming link down to the end of the point c, preparatory to being caught in the hook and the coupling effected.

Formed integral with or rigidly secured to the hook at a distance from its forward end equal to about one-third the length of the hook, is a pivot or trunnion c', which fits in the open notches or indentations c² in the side of the draw-head. By this means the hook C is pivotally yet positively connected to move longitudinally with the draw-head.

Rearward of the trunnion c' the shank of the hook is reduced slightly and passes beyond the inner end of the draw-head B. Located a slight distance beyond the inner end of the draw-head is a beam or stay D, provided with a vertically elongated slot D' through which the shank of the hook passes, and beyond which it extends for a distance equal to about that from the inner end of the draw-head to the beam D. Fixed to the extreme inner end of the hook-shank is a washer or stop d, held from rearward movement by means of a pin d' passing through the shank. Interposed between the washer d and the beam D, is a spiral spring E, held in place by means of a staple embracing one of its coils and passing into the beam. On the remaining or forward side of the beam D, a similar spring E' is arranged, and this spring embraces the shank and bears at its forward end against the washer e, which in turn bears against the inner end of the draw-head B. A staple, similar in form and arrangement to the staple of spring E, is provided for holding and steadying the spring E'. By this arrangement it will be seen that the hook and draw-head, being connected to each other, move longitudinally in unison and that both their forward and backward movements are cushioned and limited by the springs E and E'. It will also be seen that the draw-head and hook will be automatically returned to their normal positions by the springs E and E' after the pressure has been relaxed. The

normal position of the hook C is shown by Fig. 1, such position occurring when the hook is lying in nearly a horizontal plane, and with the point *c* bearing against the enlarged orifice in the mouth of the draw-head. This position is effected and retained by the flat spring F, which is firmly bolted or riveted to the top of the draw-head at F', and extends forward and slightly downward, its free end engaging the hook C at a point forward of the pivots *c'* and near its head. The spring F is secured to the outer side of the draw-head and extends through a longitudinally elongated slot G in the top side of the same, by which its engagement with the hook C is effected. The function of the slot G is twofold: to allow the spring F to engage the hook C, and to provide for the vertical play of the hook during its operation. To effect these ends the slot is formed in the top side of the head B, its rearward extremity extending to a point beyond the fulcrum *c'* of the hook, while its forward end is far enough front to allow the head of the hook to swing clear of it. The hook C is raised in operation, by means of the transverse rock-shaft H, journaled in boxes fixed to the ends of the cars and extending beyond each of the sides, where it is provided with a weighted hand-lever H' which extends normally in a direction diagonal to the longitudinal disposition of the cars. Formed integral with or securely fastened to the shaft H, at a point directly over the hook C, is a crank-arm *h*, which also extends out diagonally, but in a direction opposite to that of the lever H'. Connected to the free end of this crank is a link *h'* which extends downwardly and is connected to the hook C near its front end, by means of an eye or any suitable fastening device *h*². Thus it will be seen that owing to the peculiar arrangement of the shaft H and its levers and crank, the hook C can be readily swung on its fulcrum *c* against the tendency of the spring F, to lift the head and release the link, from each side of the car, and that by reason of the diagonal disposition of the levers H' and arm *h*, no dead-center can occur, which fact is always followed by easy and effective operation.

The preferred construction of my invention having now been set forth, I will proceed to describe its mode of operation and use. As before stated, each car is fitted with duplicate draw-heads and hook mechanism, and as the draw-heads engage each other, the link, shown at I, enters the flaring mouth of the draw-head B, whereupon it engages the face C' of the hook C, and is glanced downwardly against the bottom of the cavity in the head. As the end continues to move into the head, it passes under the point *c* of the hook and finally beyond it. At this stage the coupling operation is complete; the link may however, continue to move inwardly, and to pre-

vent excessive inward movement, the shoulder B² is formed in the cavity of the draw-head. This shoulder extends around the cavity on all sides, and is adapted to operate as a barrier to prevent its further movement. When the link strikes this shoulder, its individual movement ceases and the movement of the draw-head begins, the spring E' operating to cushion such movement and to decrease its energy until it is finally stopped by the engagement of the stirrup B' and shoulder *b*. When the pressure or shock occasioned by the engagement of the cars, has relaxed, the parts assume their normal position under the influence of the springs E and E', while the spring E serves to decrease the shock and jar occasioned by the uneven pulling of the engine or irregularities of the track. To uncouple the cars, the lever H' is swung outwardly, which will be followed by the rocking of the shaft H and lifting of the free end of the crank-arm *h*. As the arm *h* is lifted, the hook is swung on its fulcrum *c'*, against the tendency of the spring F and through the medium of the link *h'*, and passes through the slot G far enough to allow the link I to pass freely out of the draw-head, thereby uncoupling the cars. When the uncoupling has been effected, the lever H' is released and the parts assume their normal position under the influence of the spring F. By reference to the drawings, it will be seen that the hook C forms by its rearwardly elongated end, the draw-bar of the coupler, and that the draw-head and bar move longitudinally in unison with each other, thereby permitting all the parts of the coupler to adjust themselves to the movements of the cars. It will also be seen that the hook C is free to swing on its fulcrum *c* during the coupling or uncoupling operation, unaffected by the draw-head, and that when so swinging, its elongated rear end will be free to move vertically in the slot D' of the beam D. It will still further be seen that the beam D receives the draft of the strain, the stirrups B' serving only to support and retain the draw-head.

Having thus described my invention, what I claim is—

In a car coupling, the combination of a draw-head having a longitudinal slot formed in its upper face, a swinging hook arranged within the draw-head and fulcrumed so that its head will when raised pass through the slot, a leaf spring fixed to the draw-head and operating with the hook to keep it in position, and a spring connected with the hook, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

SIMON STUMP.

Witnesses:

B. S. BEEBE,
F. T. ROOSA.