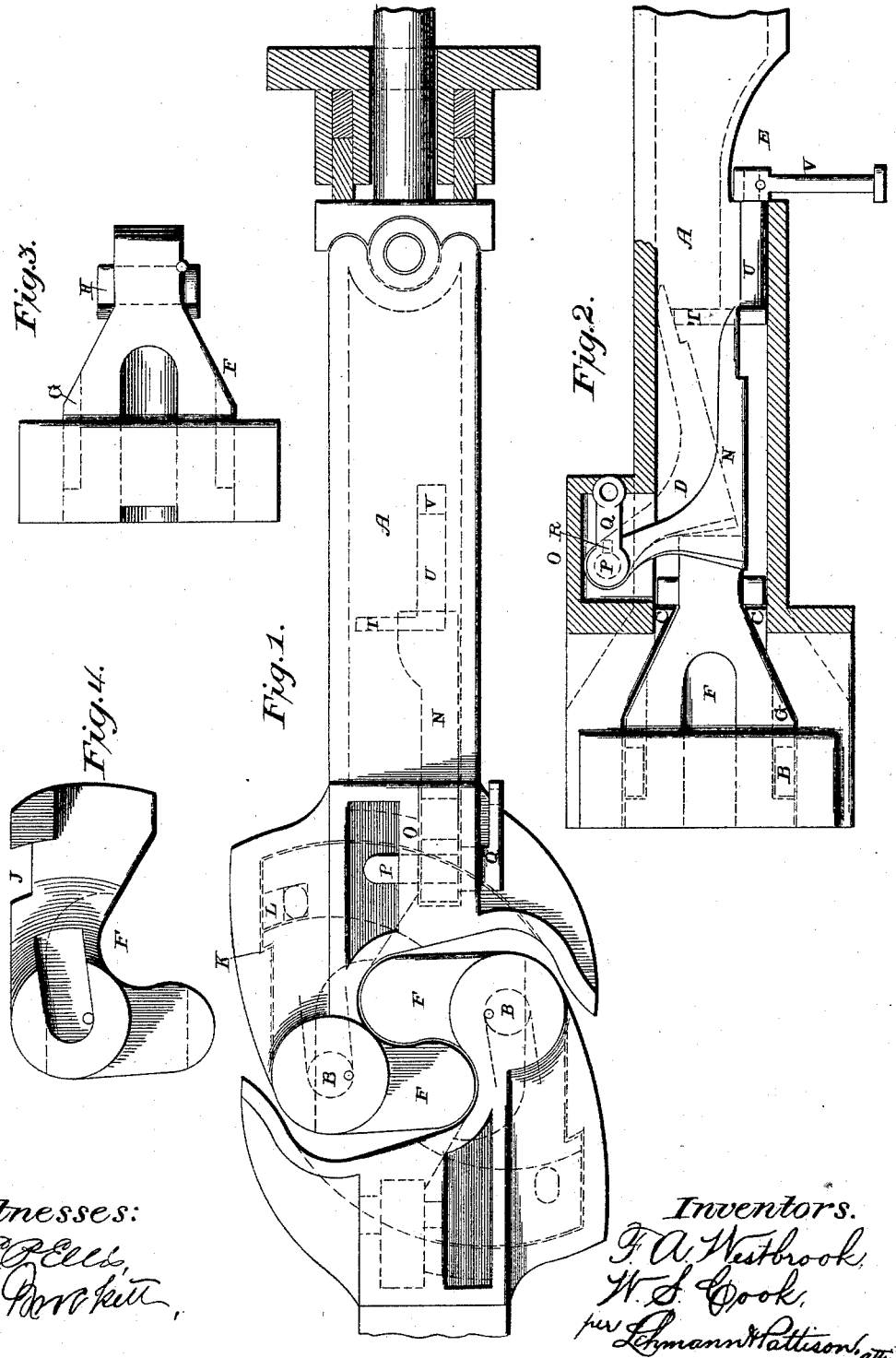
(No Model.) 2 Sheets—Sheet 1.

# F. A. WESTBROOK & W. S. COOK.

## CAR COUPLING.

No. 456,509. Patented July 21, 1891.




Witnesses:
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(No Model.) 2 Sheets—Sheet 2.

# F. A. WESTBROOK & W. S. COOK.

## CAR COUPLING.

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Fig. 6.

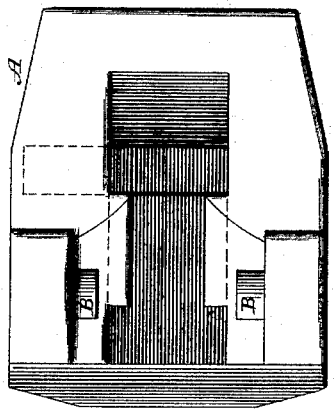



Fig. 10.

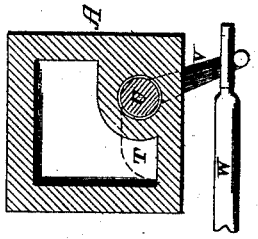



Fig. 9.

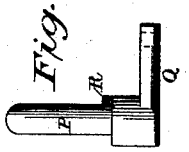



Fig. 8.

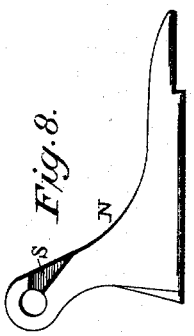



Fig. 5.

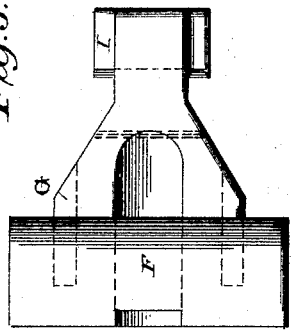
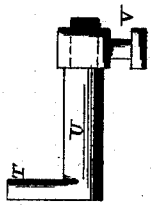



Fig. 7.

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# UNITED STATES PATENT OFFICE.

FRANK A. WESTBROOK, OF PORT JERVIS, AND WINFIELD S. COOK, OF OTISVILLE, NEW YORK.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 456,509, dated July 21, 1891.

Application filed March 7, 1891. Serial No. 384,150. (No model.)

*To all whom it may concern:*

Be it known that we, FRANK A. WESTBROOK, of Port Jervis, and WINFIELD S. COOK, of Otisville, in the county of Orange and State of New York, have invented certain new and useful Improvements in Automatic Car-Couplings; 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

Our invention relates to an improvement in automatic car-couplings; and it consists in the arrangement and combination of parts, which will be more fully described hereinafter, and pointed out in the claims.

The object of our invention is to do away with the usual pivotal bolt which is passed through both the head and the hook and substitute therefor projections which catch in recesses in the hook, and thus transfer all of the strain which has usually been brought to bear upon the pivotal bolt upon the rear portion of the hook and the interior of the draw-head.

Figure 1 is a plan view of a car-coupling to which our invention is applied. Fig. 2 is a vertical section of the same. Figs. 3, 4, and 5 are side and plan views of different forms of the hook. Fig. 6 is a front view of the draw-head alone. Figs. 7 and 8 are detail views of the lock and its operating part. Fig. 9 is a detached view of the pivotal pin, which passes through the lock. Fig. 10 is a vertical cross view taken through the rear end of the draw-head.

A represents the draw-head, which is preferably made of the shape shown and which has formed in its front end the two vertical projections B, which are in line with and extend toward each other, as shown. The opening in the front of the draw-head extends horizontally backward for a short distance in the rear of the projections B, and then the top and bottom walls of the draw-head incline toward each other and the ribs or flanges C. Back of these ribs or flanges is formed the recess D, in which the rear end of the hook moves, and the rear wall of which recess receives all of the concussion that is brought to bear upon the hook, the rear end of which rests solidly against the rear wall of the recess, as shown. The rear straight portion of the draw-head is made hollow, as shown, so as to receive the lock and the operating mechanism connected thereto. Through the rear end of this draw-head from its under side is made an opening E, from which point the operating-cam is made to operate the lock. The hook F is preferably given the shape shown, and instead of being provided in the usual manner with a bolt-hole through its front end it has two recesses G formed in its top and bottom sides, and in which recesses G the projections B are made to catch. The rear end of the hook F is shaped as shown in Figs. 3 and 5, and either through the rear end of the hook, as shown at Fig. 3, is made an opening through which a headed pin H is passed, or upon the rear inner corners of the hook are formed projections I, and which pin or projections serve to catch behind the flanges or ribs C and to receive a part of the drawing strain which is applied to the hook when the cars are being drawn forward.

Formed in or upon the hook F is a shoulder J, which engages with a corresponding shoulder K, formed inside of the draw-head, and these shoulders J K by engaging receive a portion of the whole of the drawing strain. If the pin H is used the rear end of the hook is first forced back into position in the draw-head so that the projections B enter the recesses G, and then the hook is turned around so that its rear end assumes the position shown in dotted lines when the pin H is passed through the opening in the rear end of the hook. When the hook is closed this pin catches behind the flanges or ribs C and prevents the hook from being drawn out of the draw-head. In case the projections J upon the hook are used it is necessary to cut away a portion of the ribs or flanges C so that the projections J will pass beyond them, and then an angular pin L is inserted in the draw-head through a hole in its under side, and this angular pin L then forms a shoulder corresponding to the one K formed inside of the draw-

head itself, and this pin L, by catching in the recess formed in the hook, prevents the hook from being pulled out of the draw-head. The projections B are not brought into play until the hook is turned partially around, and then the projections form the pivots upon which the hook turns, and these projections catching against the sides of the recesses G prevent the hooks from being pulled out of the draw-head.

Heretofore the hook has been pivoted in the draw-head by means of a pivotal pin which is passed down through both the head and the hook, and the largest portion of the breaks occur at this point. By transferring all of the strain upon the rear end of the hook to the interior of the draw-head breakage is impossible. The rear end of the hooks bearing against the rear walls of the recesses D, in which they move all concussions of the cars running together, are brought to bear upon the rear ends of the hooks, and not upon the projections B and recesses G.

The lock N (shown in Fig. 8) is inserted into the draw-head through a suitable opening made for that purpose, and the front end of the lock extends up into the chamber O, made in the top of the draw-head for this purpose, and through the sides of this chamber O, and the upper end of the lock is passed the pivotal pin P, which is provided with a crank or handle Q at its outer end and a lock or projection R. This projection R catches in a recess S, made in the side of the upper end of the lock of about the shape shown in Fig. 8, so that when the pin is turned by means of its handle Q the lug or projection R will catch against the wall or shoulder of the recess S, and thus cause the lock to turn with the pin and rise upward at its rear end at the same time that its front lower corner is moved backward. This pin P is provided as only an additional means of operating the lock in case an accident should happen to the operating-cam. The rear end of the lock N is widened out, as shown, and is made to catch over the front end of the operating-cam T, formed upon the front end of the partially-turning shaft U, which has a headed handle or projection V, of any suitable kind, secured to its rear end. Over the lower end of this headed handle or projection V a slotted rod W is made to catch, and by means of which the shaft U is made to partially revolve, so that the cam T, which catches under the rear flattened end of the lock, is made to raise this end of the lock and withdraw the front corner of the lock from in front of the hook F. When the front lower corner of the lock catches in front of the hook, the hook is locked in a closed position; but when the lock is raised at its rear end, the hook will freely open, so as to be set to engage with the hook of another draw-head, or so as to couple the cars in the usual manner.

Through the front end of the hook is made a suitable opening, through which the end of an ordinary coupling can be made to pass, and then a common coupling-pin be passed through the end of the link after it has passed through the hook and forms a coupling-pin bearing between the inside draft-face of the hook and the link, thus doing away with the coupling-pin hole in the hook and giving the hook greater strength.

Having thus described our invention, we claim—

1. The draw-head, the lock N, placed therein, and the pivotal pin P, provided with the handle Q, and a lug or projection R, which catches in a recess in the lock, whereby the lock can be operated by means of the pin, the parts being combined and arranged to operate substantially as specified.

2. The draw-head and the pivoted lock placed therein, combined with a partially-revolving shaft U, provided with a cam at one end to catch under the end of the lock, a handle upon its rear end, and an operating-rod, substantially as shown.

3. In a car-coupling, a draw-head having its inner end converging and provided with ribs, combined with a hook having its inner end reduced to correspond and fit the converging walls of the draw-head, and projections to catch behind the said ribs, whereby the converging walls of the coupling receive the buffing and the ribs the draft, the hook and draw-head provided, respectively, with projections and recesses to prevent lateral movement only, the parts combined substantially as described.

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

FRANK A. WESTBROOK.
WINFIELD S. COOK.

Witnesses:
BENJAMIN C. TOTTEN,
FRED SCHWINKER.