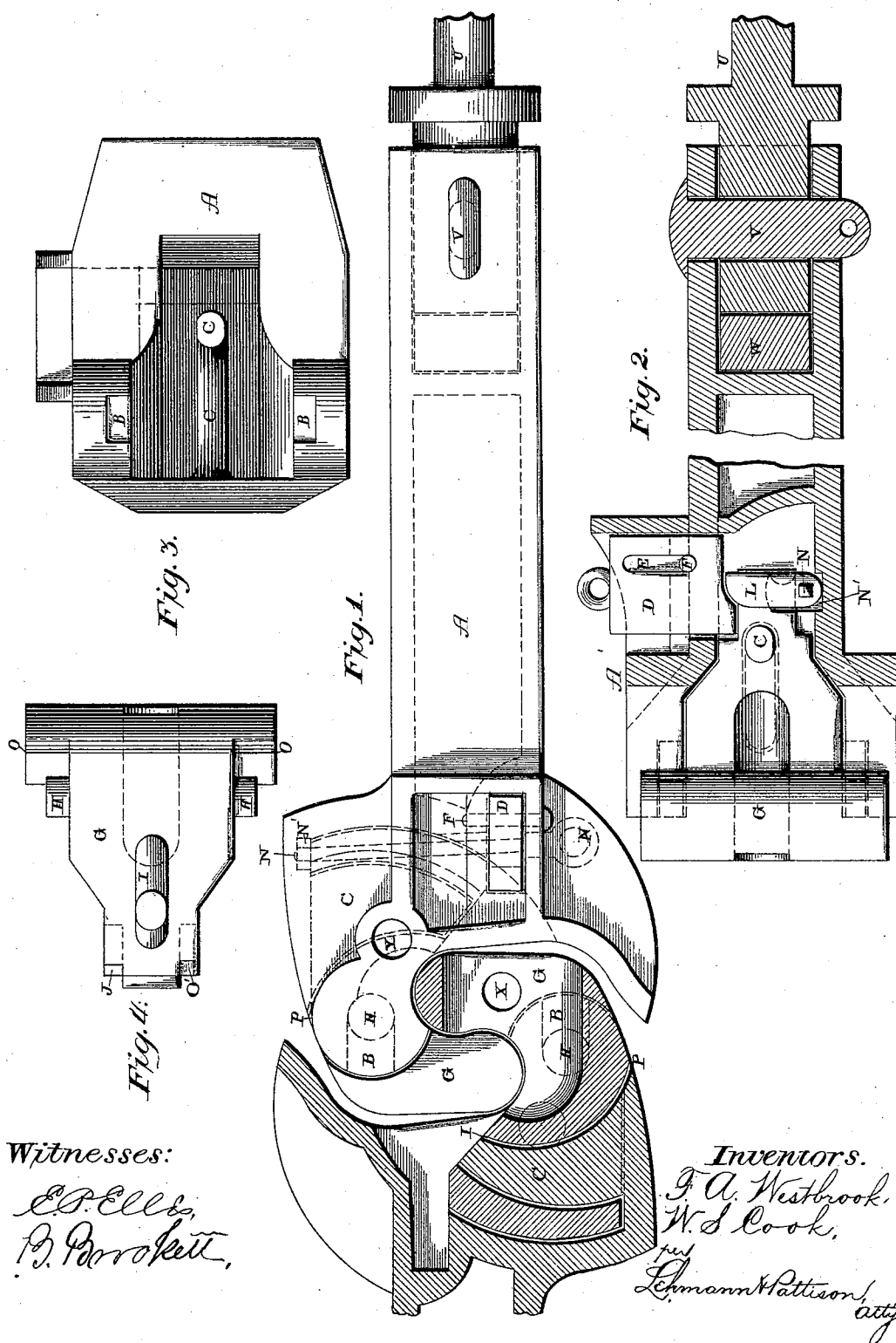


(No Model.)

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CAR COUPLING.

No. 457,468.

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Witnesses:

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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. 457,468, dated August 11, 1891.

Application filed March 7, 1891. Serial No. 384,151. (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, first, in the draw-head having suitable recesses and a curved hook, combined with a coupling-head provided with projections to catch in the recesses in the head and with an opening through its rear end for the hook to pass through; second, in a coupling-hook provided with a shoulder upon its inner corner, combined with a draw-head having an opening through its top, a vertically-moving slotted lock, a pin which passes through the lock, and an operating-shaft provided with a cam for raising the lock; third, in the arrangement and combination of parts, which will be more fully described hereinafter.

The object of our invention is to provide a strong and durable automatic coupler of the "twin-jaw" class, and to provide it with means for throwing open the hook or knuckle with an uncoupling-lever from the outside of the car.

Figure 1 is a horizontal section of a car-coupling which embodies our invention. Fig. 2 is a longitudinal vertical section of the same. Fig. 3 is a front view of the draw-head alone. Fig. 4 is a side elevation of the hook or knuckle alone.

A represents the draw-head, which is provided with recesses B in the top and bottom of its front end, and which is provided with the curved hook C, which extends horizontally from its back and outer wall. Through the top of this draw-head is formed a suitable opening, through which is passed the vertically-moving lock D, having a vertical slot E, through which is passed a stock-pin F to limit

its upward movement. This slot E and pin F allow the lock D to drop freely down into position, but prevent the lock from being raised sufficiently high to allow the hook or knuckle G to become displaced. The hook or knuckle G is preferably made of the shape shown, and is provided with the projections H on its upper and lower sides for catching in the recesses B in the draw-head, and thus preventing the hook or knuckle from having any lateral movement. The projections H do not have any strain brought to bear upon them, but allow the hook or knuckle to be freely drawn out of the head when the hook or knuckle is turned into the proper position for that purpose. Through the rear end of the hook or knuckle is formed a curved opening I, through which the curved hook C passes for the purpose of receiving the whole drawing strain. This hook is made tapering, as shown in Fig. 1; but we do not limit ourselves to any precise construction in this respect. Before the hook C can be made to enter the opening I the hook must have its projections H enter the recesses B in the draw-head, and then the hook is turned around, the lock being removed until the outer end of the hook enters the inner end of the opening I. The inner end of the hook or knuckle bears directly against the rear wall of the draw-head, and hence the whole of the buffing strain comes upon the rear wall of the draw-head and none upon the hook C or the projections H. Upon the inner rear corner of the hook is formed a stop or shoulder J of any suitable construction, which shoulder prevents the hook or knuckle from being moved around sufficiently far to be withdrawn from the draw-head as long as the lock D is in position. When the lock D is raised by means of the cam L, secured to the inner portion of the operating shaft or rod N and the pin F is in place, the hook or knuckle can be swung around until the shoulder J strikes against the lock D; but the hook can be moved no farther until the pin F is removed, and then the lock D can be raised sufficiently high to allow the shoulder J to pass under it.

Loosely fastened to the inner end of the operating-rod N is the plate N', which is not

caused to revolve when the rod is turned to operate the cam L. This plate N' engages with the shoulder O' on the bottom of the inner end of the hook, so that after the cam has
 5 been raised into an upright position and the rod N is drawn endwise toward the side of the car the hook is pulled open ready to couple.

In order to limit the distance that the hook can be turned around inside of the draw-head after the lock D has been raised sufficiently high to allow the stop J to pass under it, the shoulders O are formed upon the top and bottom of the outer end of the hook, and these shoulders strike against the shoulders P of the draw-head. The operating-rod N, which
 15 passes horizontally through the side of the draw-head, can be operated from the outside of the draw-head, and thus allow the hook G to be thrown back at any time, either for the purpose of uncoupling the cars or to set the draw-head, so as to automatically couple with the next adjoining draw-head. In the outer end of the hook is formed a horizontal opening to receive the end of the ordinary coupling-link, and through this link may be passed
 25 an ordinary coupling-pin, which is dropped through the vertical opening X in the hook that is made for this purpose. Should the hook become broken, so as to be unfitted for use, the hook can be removed entirely from the draw-head, and then a pin can be passed down through the opening Y, which is made in the draw-head.

If desired, upon the rear end of the hook
 35 will be formed shoulders which will catch inside of ribs or flanges formed inside of the draw-head. We do not limit ourselves to any particular manner of forming the stop or shoulder J upon the draw-head, for, if preferred, this stop may be formed upon the top and bottom edges of the inner end of the hook, and these stops are made to form shoulders which catch against corresponding abutments formed in the draw-head, and upon these
 45 shoulders will be brought the drawing strain instead of upon the hook C. (Shown in Fig. 1.)

In the rear end of the draw-head is formed a recess or pocket of any suitable depth, and in this pocket is placed a cushion W, against
 50 which the end of the slotted draft-bolt U bears. Through this draft-bolt and the end of the draw-head is passed the bolt V, by means of which the draft-bolt is secured to the coupling-head. The slot through the draft-bolt is made wider than the bolt V, so that
 55 the bolt can have a slight back-and-forth play to compress the cushion without striking the pin. The object of this cushion is to relieve the draw-head and draft appliances from all
 60 dead or crushing blows.

We do not limit ourselves to any precise construction of parts as are here shown, for

these may be varied at will without departing from the spirit of our invention.

Having thus described our invention, we 65 claim—

1. In a car-coupling, a draw-head and a jaw, one having pivotal recesses in the line of draft which have open outer ends and a horizontal projection and the other pivotal pro- 70 jections which enter the said recesses, and a horizontal opening for the reception of the said horizontal projection, substantially as shown.

2. In a car-coupling, a draw-head and a jaw 75 combined, the respective members having pivotal recesses with open outer ends, a horizontal opening, pivotal projections which enter the said recesses, and a horizontal projection which enters the said opening, the 80 said opening and projection extending across the draft-line drawn through the said pivotal recesses, the parts combined substantially as described.

3. The draw-head provided with an open- 85 ing through its top, the lock moving vertically therein and provided with a slot, the pin F, which passes through the slot, the operating-shaft, and the cam secured to the shaft for raising the lock, combined with the hook or 90 knuckle having a shoulder or stop J formed thereon, substantially as set forth.

4. The draw-head provided with the recesses B in its outer end and the shoulders P, combined with the hook or knuckle hav- 95 ing the projections H to catch in the recesses and the shoulders or flanges O and having an opening through its rear end with the hook C, which is formed as a part of the draw-head, the vertically-moving slotted block, the oper- 100 ating-cam, and the shaft secured to the cam, substantially as specified.

5. The draw-head having a pocket or recess formed in its rear end, combined with a cushion, the slotted draft-bar, and the pin or 105 bolt which is passed through both the draw-head and the draft-bar, substantially as shown.

6. The hook provided with a shoulder O' on its inner lower corner, combined with the endwise-moving rod, and the plate N', loosely 110 applied to the rod, substantially as described.

7. The pivoted hook and the vertically-moving lock D, combined with the partly-revolving endwise-moving rod N, the cam L, and the plate N', loosely attached to the rod, 115 substantially as set forth.

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

FRANK A. WESTBROOK.
 WINFIELD S. COOK.

Witnesses:

LUTON LANDFIELD,
 HENRY W. WIGGINS.