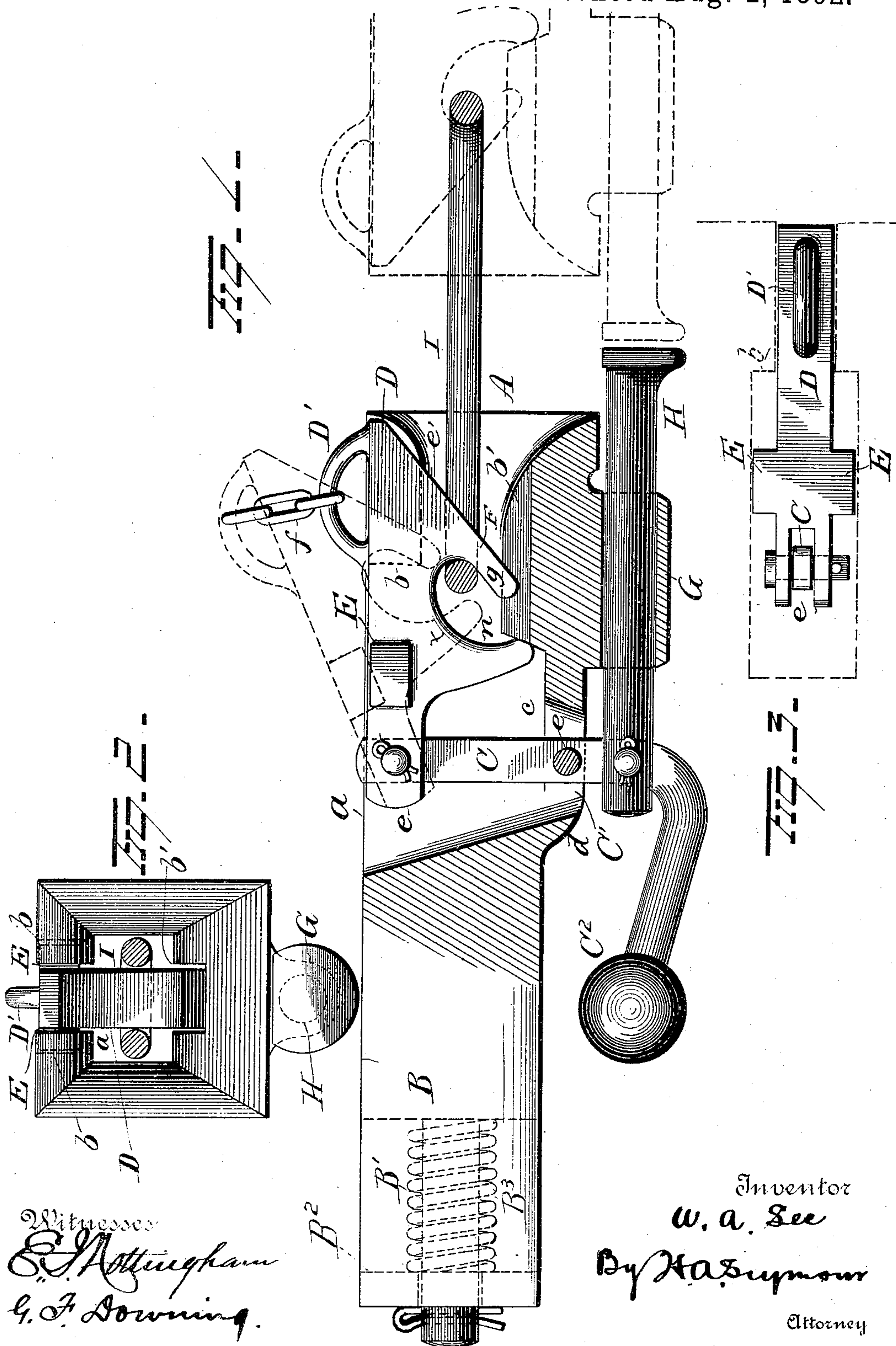


(No Model.)

W. A. LEE.
CAR COUPLING.

No. 479,885.

Patented Aug. 2, 1892.



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UNITED STATES PATENT OFFICE.

WILLIAM A. LEE, OF WINFIELD, KANSAS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 479,885, dated August 2, 1892.

Application filed March 25, 1892. Serial No. 426,371. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. LEE, a resident of Winfield, in the county of Cowley and State of Kansas, have invented certain new and useful Improvements in Car-Couplings; and I 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 appertains to make and use the same.

My invention relates to an improvement in car-couplings, the object being to so construct a car-coupling that it will be simple, effective, and automatic in operation and which may be coupled with draw-heads of ordinary construction.

A further object is to so construct a car-coupling that the link (when not in use) will be sheathed within the draw-head and so that said link will, by the proper movement of the engaging-hook and other parts, be thrown forward and out of the draw-head at the moment of engagement with another draw-head, holding the link in a horizontal position as it passes out and into the approaching draw-head, whereby an automatic coupler will be produced.

A further object is to so construct a car-coupling that by the use of bumpers the coupling-hooks will be thrown forward at the moment of contact with another draw-head, thus causing perfect engagement of the hook in the draw-head with the link.

A further object is to provide weights constructed and arranged in such manner that when the cars slacken in their speed or are turning a curve said weights will act to maintain the coupling-link taut.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as hereinafter set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a longitudinal sectional view showing the draw-bar in side elevation. Fig. 2 is a plan view. Fig. 3 is an end view.

A represents the draw-head, having a flaring mouth, and B the draw-bar, the latter being preferably provided with a shank B', adapted to pass through a timber B² and have a spring B³ encircling it, said spring bearing

at one end against the draw-bar and at the other end against the timber B². The draw-head A is made in its top with a slot *a*, the rear portion of said slot being made wider than the forward portion, so as to form shoulders or stops *b*, for a purpose hereinafter explained, and in the lower portion of the draw-head a groove *b'* is made. An opening *c* is made in the bottom of the draw-head for the passage of a lever C, and projecting from the draw-head at opposite sides of said opening are lugs or ears *d*, to which said lever is pivotally connected by a pin or bolt *e*. The lever C is made with a rearwardly-projecting arm C', at the free end of which a weight C² is located, and the upper end of said lever, which extends upwardly within the draw-head, is pivotally connected to the bifurcated arm *e* of the hook D, said hook having an inclined outer edge *e'*. The hook D is provided on its upper edge with a loop or handle D', by means of which said hook may be raised by hand, or, preferably, a chain or cord *f* will be attached to said loop and wound upon a drum attached to the car, said drum being provided with a crank, by means of which to turn it to wind the chain or rope *f* thereon to raise the hook. Located at the upper edge of the hook D, preferably somewhat rearwardly of its center, are laterally-projecting integral stops E, which when the coupling is in action, abut against the shoulders or stops *b*, and thus take up the strain brought to bear upon the hook D. The hook D is made with a depending member F, curved on its outer edge *e*², adapted to project below the curved end *g* of the hook D and move in the slot *b'* in the draw-head, and thus prevent the hook from lateral movement, said curved member *g* of the hook also entering the groove *b'*.

A bracket G depends from the draw-head and supports a sliding bar or bumper H, the forward end of said bar or bumper projecting at its forward end beyond the end of the draw-head, where it will be in position to be struck by the bar or bumper of an approaching draw-head. The rear end of the bar or bumper H is pivotally connected to the lever C at a point below its fulcrum.

From the construction and arrangement of parts, as above described, it will be seen that the member F of the hook D depends suffi-

ciently so that the coupling-link I cannot pass under it in coupling, and that as the member *g* of the hook projects into the slot *b'* the link cannot be disengaged therefrom until
 5 the hook D is raised. Assuming now that the link I is engaged by the hook D, as shown in Fig. 1, the weighted lever C will tend to withdraw the hook D and the link I carried thereby, and thus sheath the greater portion
 10 of the said link. By thus sheathing or incasing the greater portion of the coupling-link it is held in a horizontal position and insures a greater certainty of a proper coupling of the cars, as the nearer the forward
 15 ends of the draw-heads approach the greater are the chances of the link entering the draw-head should one draw-head be a little lower or higher than the other, whereas if the link protrudes any length from the draw-head it
 20 will depend or fall down somewhat, and thus render the proper entrance of the link into the approaching draw-head very doubtful. With the parts in the position shown in Fig.
 1, when a car to be coupled approaches the
 25 bar or buffer H of said approaching car will strike the bar or buffer H of the car or draw-head carrying the link and force said bars or buffers H rearwardly. By thus forcing the bars or buffers rearwardly the upper ends of
 30 the levers C will be moved forwardly, carrying the hooks D forwardly. As the hook D moves forwardly it engages at *x* the link I and projects said link, so that it will enter the draw-head of the approaching car. The forward
 35 movement of the hook D will be limited by the stops E and *b*, by which the strain brought to bear on the hook will be taken up. In coupling the cars the hook in the draw-head which does not carry the link will also be
 40 forced forward in a manner identical with that above explained and the link I will strike the inclined forward edge of the hook D and slip under the member *g* thereof. When the cars are uncoupled, the hook D and link I
 45 will be withdrawn by the weighted lever C and the said link be again sheathed, as above explained. When the cars are in motion, should they slacken, back, or turn a curve, the links I will always be maintained in proper
 50 position relatively to the hooks D by the weighted arm or lever C.

My improved coupling can be readily used in connection with draw-heads of ordinary construction, in which the ordinary coupling-
 55 pin is employed, thus avoiding the necessity of making all the draw-heads used by a company of the same pattern.

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

1. The combination, with a draw-head having a slot in its top and shoulders or stops at each side of the slot, of a hook and stops on the hook rearward of the stops on the draw-

head and out of engagement with said stops 65 when the hook is in its upward or normally-elevated position, substantially as set forth.

2. The combination, with a draw-head having stops formed thereon, of a longitudinally-movable hook and stops thereon rearward of 70 the stops on the draw-head in position to clear the stops on the draw-head when the hook is in its normal or elevated position and adapted to strike the stops on the draw-head when the hook is drawn out of its normal position, sub- 75 stantially as set forth.

3. The combination, with a draw-head and a longitudinally-movable hook, of a pivoted weighted lever pivotally connected to said hook, substantially as set forth. 80

4. The combination, with a draw-head having a groove therein, of a longitudinally-movable hook, said hook having a member adapted to enter said groove in the draw-head, sub- 85 stantially as set forth.

5. The combination, with a draw-head having a groove therein, of a longitudinally-movable hook, said hook having two depending members adapted to enter said groove in the draw-head, substantially as set forth. 90

6. The combination, with a draw-head having a groove in its lower portion and a slot in its upper portion, of a pivoted hook adapted to have a longitudinal movement, said hook having depending members adapted to enter 95 said groove, and a loop or handle projecting from the top of said hook through the slot in the top of the draw-head, substantially as set forth.

7. The combination, with a draw-head, of 100 a longitudinally-movable hook therein, a pivoted weighted lever pivotally connected to said hook, and a sliding bar or bumper pivotally connected to said weighted lever at one side of its fulcrum, substantially as set forth. 105

8. The combination, with a draw-head, of a pivoted weighted lever projecting therein, a bar or buffer pivotally connected to said weighted lever at a point beneath the draw-head, and a longitudinally-movable hook piv- 110 otally connected to said weighted lever, substantially as set forth.

9. The combination, with a draw-head and a depending bracket, of a pivoted weighted lever, a sliding bar or bumper mounted in 115 said depending bracket and pivotally connected to said weighted lever at a point below the draw-head, and a longitudinally-movable hook pivotally connected to said weighted lever, substantially as set forth. 120

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WILLIAM A. LEE.

Witnesses:

JOHN BOBBITT,
 ED L. PECKHAM.