

(No Model.)

C. F. SPRINGER.
CAR COUPLING.

2 Sheets—Sheet 1.

No. 508,853.

Patented Nov. 14, 1893.

Fig. 1.

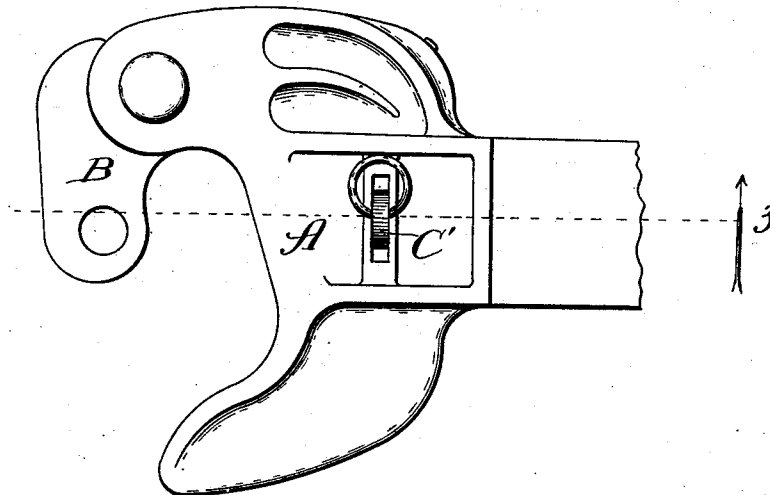
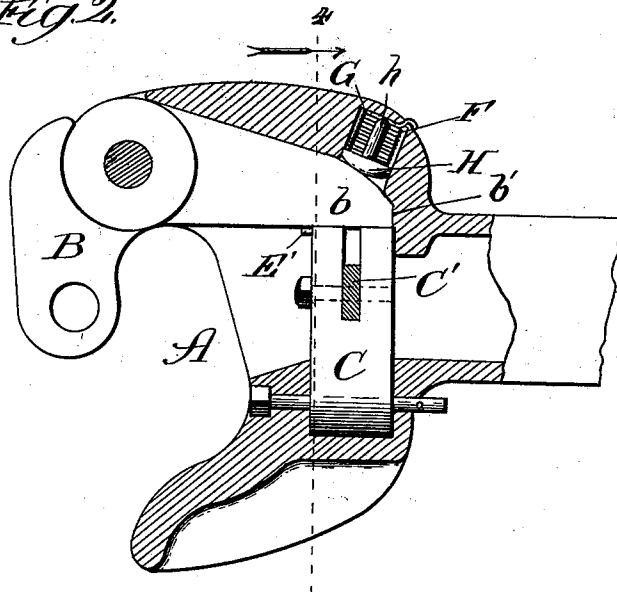


Fig. 2.



Witnesses:
Edw. C. Chayford,
Clifford A. White.

Inventor:
Clifton F. Springer,
By Manning & Manning, Attorneys.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

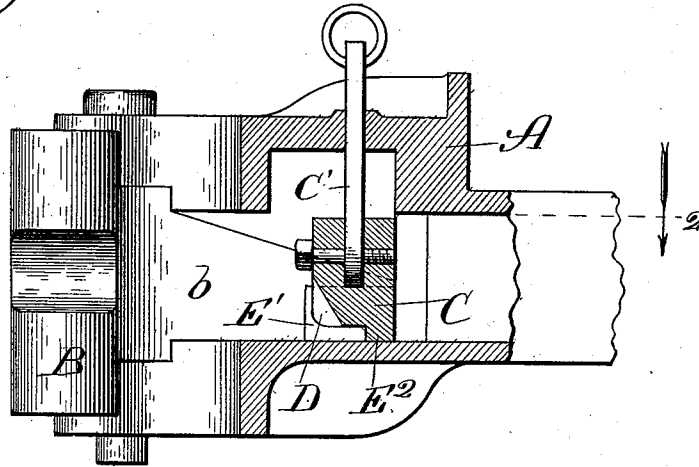


Fig. 4.

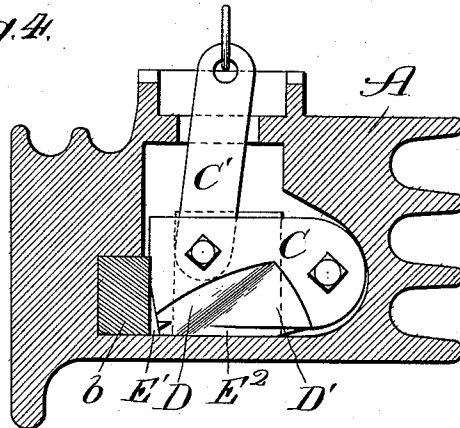
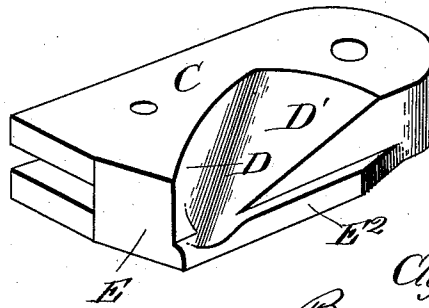


Fig. 5.



Witnesses:
Paul Gaylord,
Clifford White.

Inventor:
Clifton F. Springer,
By *William J. Payson*
Att'y

UNITED STATES PATENT OFFICE.

CLIFTON F. SPRINGER, OF CHICAGO, ILLINOIS, ASSIGNOR TO MRS. C. J. SPRINGER AND ELIZA E. ANKENY, OF DES MOINES, IOWA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 508,853, dated November 14, 1893.

Application filed February 16, 1893. Serial No. 462,585. (No model.)

To all whom it may concern:

Be it known that I, CLIFTON F. SPRINGER, of Chicago, Illinois, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification.

My invention relates to what are known as "vertical hook" couplers and is intended as an improvement upon the coupler shown in United States Letters Patent No. 476,322, issued to me June 7, 1892.

The object of the present invention is to improve upon the construction of the locking latch in various particulars; to provide a stop or abutment for the tail of the rotating hook and for the latch; to equip the coupler with an automatic device for opening the same, which device also preferably supports the locking latch in a raised position, and to improve upon and simplify the construction of the coupler in various particulars, as hereinafter to be more particularly pointed out and claimed.

In the drawings, Figure 1 is a plan view of a coupler embodying my improvements; Figs. 2, 3, and 4, sections on lines 2 of Fig. 3, 3 of Fig. 1, and 4 of Fig. 2, respectively, all of the sections being taken in the direction indicated by the respective arrows; and Fig. 5 is a perspective view of the latch removed from the coupler.

The draw head A is made preferably in the shape shown in the drawings, though this shape may be departed from as considered advisable or necessary. It may be made of any suitable form and dimensions that will permit of the operation of the parts, as hereinafter to be described, and of any desired material. Pivoted in this draw head is a rotating hook or knuckle B. Various means have been used for providing a stop or abutment for this hook, in order to relieve the strain upon its bearings, as, for instance, lugs or bosses have been cast upon the inner side of the draw head adapted to engage a corresponding shoulder upon the tail of the hook. In my invention these shoulders and bosses are dispensed with, and the parts of the draw head and hook so proportioned that the tail b of the hook, as it swings in, fits against the rearward side of the interior of the draw head at the point b'. The draw head

is shaped in the usual manner, and no special boss or projection is needed for the purpose of receiving the thrust of the tail of the hook, which is a great improvement over any other form with which I am acquainted.

The locking latch C is supported at one side c, of the draw head upon a suitable pin or pivot, and adapted to be raised and lowered in a vertical plane by means of a link C', which may, if desired, be connected with any suitable lifting apparatus. I say that the latch is raised and lowered by this means but in practice it would be raised by the link, and fall through gravity. The form of this latch is more particularly shown in Figs. 4 and 5. It consists of a substantially rectangular block of metal of suitable thickness, cut away upon a curve upon one side, as shown, to form curving cam or beveled surfaces, D, D'. As the tail of the rotating hook swings inward, it contacts with this curving cavity, and raises the latch, beyond which it passes. After the tail has passed, the hook again falls through gravity. At one end (shown at the left hand of Fig. 4) the latch is slightly beveled or rounded, as shown at E, and the tail of the hook is provided with a slanting projection at E', shown more particularly in Fig. 4, adapted to fit against this curved or beveled portion of the latch, so that as the latch is raised these beveled surfaces work upon each other, forming a reasonably close fit, while yet allowing the latch to rise and fall freely. On its under side, the latch is provided with a longitudinal lug or projection E², which contacts, when the latch is down, with the floor of the draw head, maintaining the latch in the desired position, but cut away at the right hand, as shown in Figs. 4 and 5, to permit the latch to readily rotate. It will be observed that when the latch is down in place it also abuts against that portion of the draw head marked b', thereby affording a very close and firm contact between the draw head, the hook and latch, as will be evident from an inspection of Fig. 2.

To automatically throw open the knuckle, I prefer to provide the following means, although this opening device can be entirely omitted, if desired: Supported in the cavity F, formed in the draw head at a suitable point

behind the tail of the hook or knuckle, is a coiled spring, G, fastened at one end in any suitable manner to the draw head. Abutting against the other end of this spring is a head or block H, secured to the spring and preferably provided with a spindle, h, which passes, as shown into the spring. When the knuckle is locked in the position shown in Fig. 2, the block H will be forced in, compressing the spring, but when the locking latch is raised, the force of the expansion of this spring, acting through the head, will throw open the knuckle, and the head will then pass under the latch and hold it in a raised position. When the tail of the hook swings in again, the head will be restored to its normal position, compressing the spring. In this way I construct what I consider a very simple, and efficient form of coupler. The curving cam surfaces render it exceedingly easy for the tail of the hook to raise this latch, and are a marked improvement in operation upon the form shown in my previous patent. The means shown for affording a firm abutment for both knuckle and latch, operates in the most satisfactory manner, and all of the parts of the coupler co-act to the best possible advantage. While therefore, I have claimed more or less precise forms, it is not my intention to unduly limit myself thereto, but I contemplate all proper changes in the form, proportion, and the substitution of equivalent means, as may be desirable or necessary.

I claim—

1. In a car coupling the combination of a drawhead and hook pivotally supported therein, and a latch pivoted in the drawhead and swinging in a plane transverse to the longitudinal line of such drawhead, such latch being provided with a concave cam surface in its forward face, adapted to be engaged by the tail of the hook as it swings in, substantially as described.

2. In a car coupling, the combination of a draw head, a hook pivotally supported therein, and a latch pivoted in the draw head so as to rise and fall in a vertical plane, such latch being beveled or curved at the end adjacent to the tail of the hook, and such hook being provided with a projection adapted to fit the curvature of the latch, substantially as described.

3. In a car coupling, the combination of a draw head, a horizontally rotating hook and a vertically swinging latch, the latch and hook abutting when the hook is locked against each other and the side of the latch and the rearward face of the tail of the hook abutting against the inner face of the draw head, substantially as described.

4. In a car coupling, a locking latch swinging in a plane transverse to the longitudinal line of the drawhead and having in its forward face a concave curved cam surface, substantially as described.

5. In a car coupling, a locking latch provided with a curving cam surface in one face, a beveled surface at one end, and a lug or extension along its lower side, substantially as described.

6. In a car coupling, the combination of a draw head, a horizontally rotating hook, the tail whereof is provided with a projection upon the side adjacent to the latch, and a vertically swinging locking latch having a curved cam surface in one face, being beveled at one end to fit upon the projection on the tail of the hook and having a lug or projection along its lower side, substantially as described.

CLIFTON F. SPRINGER.

Witnesses:

GEORGE S. PAYSON,
SAMUEL E. HIBBEN.