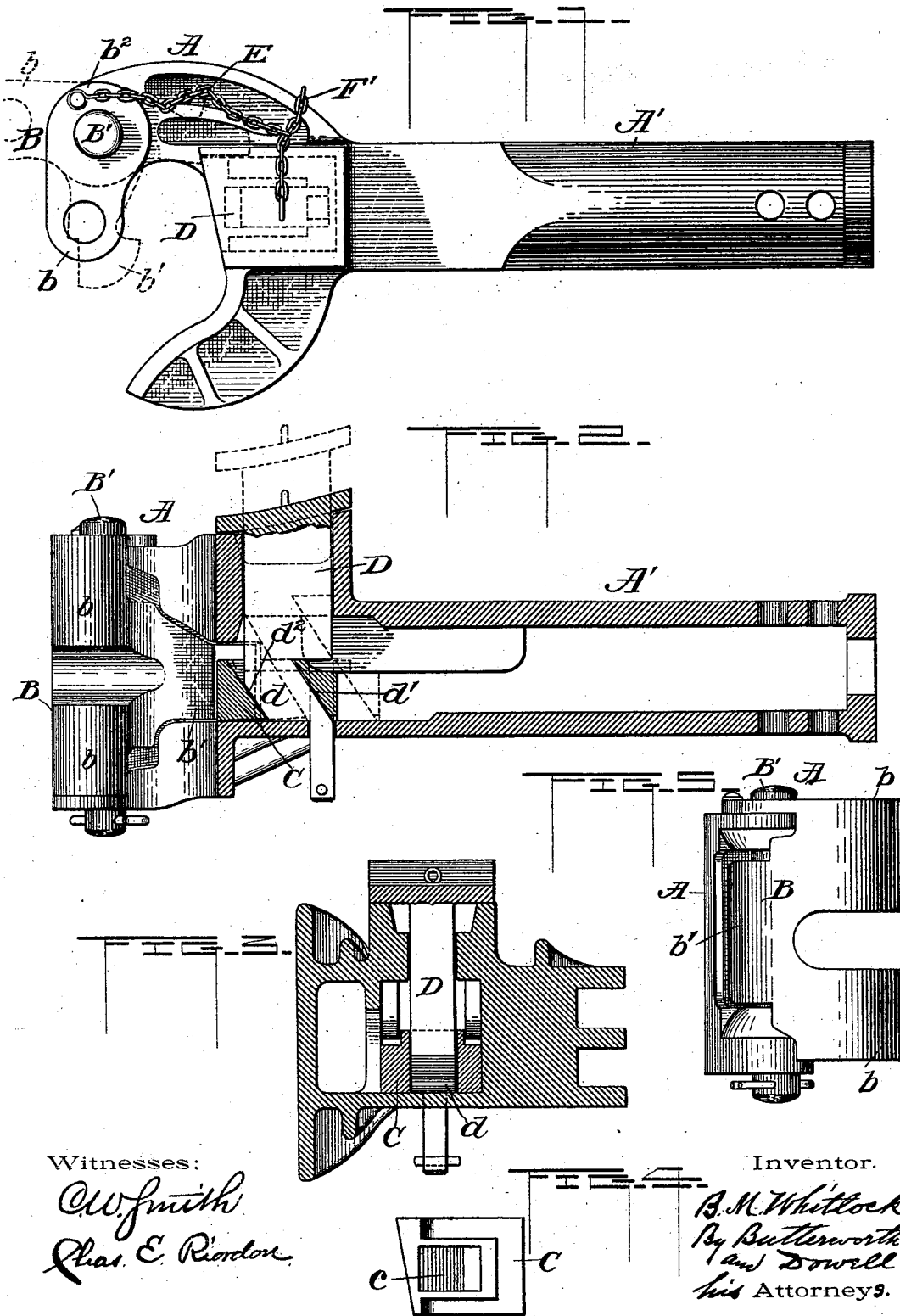


(No Model.)

B. M. WHITLOCK.  
CAR COUPLING.

No. 517,505.

Patented Apr. 3, 1894.



# UNITED STATES PATENT OFFICE.

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## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 517,505, dated April 3, 1894.

Application filed January 19, 1894. Serial No. 497,388. (No model.)

*To all whom it may concern:*

Be it known that I, BENJAMIN MORRIS WHITLOCK, a citizen of the United States, residing at New York, in the county of New York and State of New York, 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.

This invention relates to car couplings, and more particularly to couplings of the Janney type.

The invention will first be described with reference to the accompanying drawings, which form a part of this specification, and then pointed out in the claims.

Figure 1 of the drawings represents a plan of a car coupling embodying my invention. Fig. 2 is a vertical longitudinal sectional elevation; and Fig. 3 a cross section of the same. Fig. 4 is a detail of the locking block; and Fig. 5 a front view of the knuckle showing its pivotal connection with one side of the coupler-head.

Similar letters of reference denote similar parts.

A denotes the coupler-head having the usual shank A'.

B denotes the knuckle which may be of the angular form shown or any preferred construction. It is pivoted at its angle to the head A, at one side of the latter so as to adapt its inner arm or tail-piece b', to swing into a recess at that side of the head.

As shown, the knuckle consists of an angular or elbow-shaped piece or casting having an outer portion or arm b, and an inner portion or tail-piece b', arranged at an angle to each other, and pivoted to the coupler-head by means of a suitable pivot pin B'; the outer portion of the knuckle being bifurcated and perforated as shown to adapt it for use in coupling cars by means of an ordinary link and pin. When the inner arm or tail-piece of the knuckle is swung into the recess of the coupler-head in coupling the cars together, it may be locked in such position, so as to control the position of the main or outer arm thereof, by means of a locking block C, adapt-

ed to slide back and forth in a recess of the coupler-head or shank for the purpose of locking or releasing the knuckle as may be desired. The block C, is itself controlled and locked in position to confine the knuckle in the recess by means of a vertically sliding pin D, which is actuated by gravity (or a spring) in holding the block to its normal forward position. The pin D, is provided with an angular portion d, adapted to work in an opening in or through the lock-block for the purpose of imparting the desired movement to said block when the pin is raised or lowered. This angular portion of the pin in the present instance is formed by cutting away a portion of the rear edge or side of the pin so as to form a triangular recess with an inclined wall d', and beveling the opposite side or edge of the pin so as to form an incline d<sup>2</sup>, at the front. This angular or oblique portion d, may pass into or through an opening c, in the block C; said opening being preferably formed with opposing inclined walls which impinge against the inclines d', d<sup>2</sup>, of the pin, and compel the block to move in a plane at an angle to the path of movement of the pin, (preferably at a right angle) so that the direction of motion of the block will be across the path of movement or direction of motion of the pin, and the block will recede or advance (according to the direction of motion of the pin) about the same distance that the pin travels in rising or falling. The distance traveled, however, may vary as the inclination of the oblique portion of the pin is varied. By this means, when the pin D is raised the block will be thrown backward and vice versa. When the inner arm b', of the knuckle is in the recess of the coupler-head and the block is in its normal position at the bottom of the recess in which it slides, said arm will be confined in said recess, so as to control the position of the outer arm or main portion b. When it is desired to release the knuckle, the pin D may be raised, thereby throwing the block backward out of the path of the knuckle, so that the latter may swing around into the position shown in dotted lines in Fig. 1. When the knuckle is turned in the opposite direction its inner arm will engage the forward, prefer-

ably inclined, edge of the block and slide the latter backward, simultaneously raising the pin, and when said arm has passed beyond the block the pin will drop and advance the block into the path of the knuckle-arm and confine the latter within the recess of the coupler-head. The knuckle B, has a plate or arm  $b^2$ , extending in rear of its pivot and overlying the outer end of the extension of the coupler-head to which the knuckle is pivoted; said plate being adapted to brace and strengthen the knuckle and at the same time afford a convenient means outside of the coupler-head for attaching a knuckle opening device. In the present instance such device consists of a flexible connection or chain E, having one end secured to the plate or extension  $b^2$ , and the opposite end secured to a similar flexible connection or chain F; one end of the latter being secured to the locking pin D, while its free end extends to a convenient point to be reached when it is desired to raise the locking pin and open the knuckle. An upward pull upon the chain F, will first raise the pin, causing the block C, to recede, and then open the knuckle.

The coupling thus described consists of few parts, and is simple in construction inexpensive in manufacture, and efficient and reliable in use. Furthermore, the devices for raising the locking pin and opening the knuckle are arranged outside of and above the coupler-head, and when the locking block is slid backward by the engagement therewith of the inner arm of the knuckle, in the act of coupling the cars, the pin will be raised to a position to adapt it to automatically advance the block and lock the knuckle the moment the latter has passed into the recess beyond the block. The same result will also be accomplished when the pin is raised by hand, either for the purpose of coupling or uncoupling, the block being positively controlled in both its forward and backward movements by the pin, and normally securely locked so as to prevent accidental disarrangement of the parts in use.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a car coupling, a coupler-head having a recess and an angular knuckle pivoted

thereto so that one arm of the knuckle may swing into said recess, in combination with a sliding locking block and a locking pin adapted to move across the path of movement of the sliding block, and provided with an oblique portion engaging an opening in said block, whereby the latter is moved when the pin is raised or lowered so as to either unlock or lock the coupling, according to the direction of motion, substantially as described.

2. In a car coupling, a coupler-head having a recess therein, an angular knuckle pivoted to said head so as to adapt one arm thereof to swing into said recess, and a locking device consisting of a horizontally sliding block and a vertically sliding pin; the latter having an oblique portion which passes through said block so as to cause the block to move across the path of movement of the pin when the latter is raised or lowered, substantially as described.

3. The combination, in a car coupling, of the vertically movable pin and the sliding locking block controlled by said pin, with the angular knuckle having an inner arm adapted to swing into a recess of the coupler-head and an outer arm provided with a plate or extension in rear of the knuckle pivot outside of the coupler-head and overlying the extension of the latter to which the knuckle is pivoted, and a flexible device or chain connecting said plate and locking-pin, substantially as and for the purpose described.

4. In combination with the recessed coupler-head, the angular knuckle having an arm adapted to swing into said recess, a horizontally sliding block for locking said knuckle and a vertically sliding pin for locking said block, arranged to travel across the path of movement of the block, so that when the pin is raised the block will recede and disengage the knuckle, said pin being adapted to fall by gravity and advance the block so as to confine the knuckle-arm within the recess, substantially as described.

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

BENJAMIN MORRIS WHITLOCK.

Witnesses:

CHAS. J. WHITE,

J. LAWRENCE ASPINWALL.