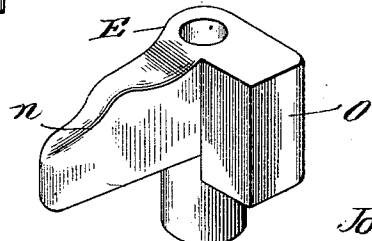
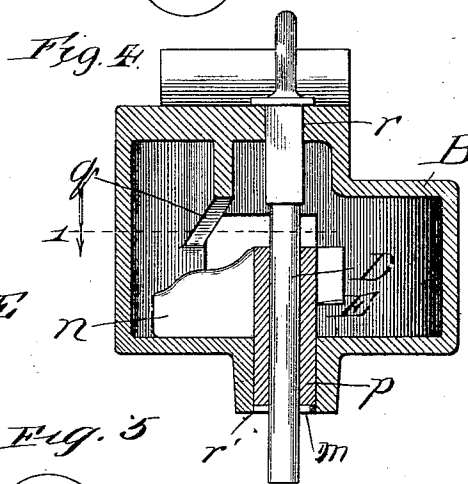
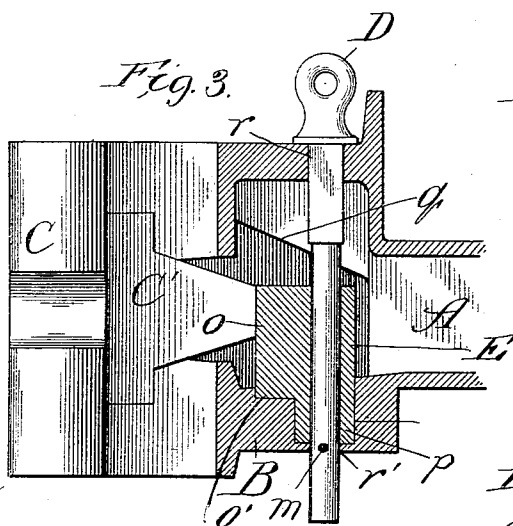
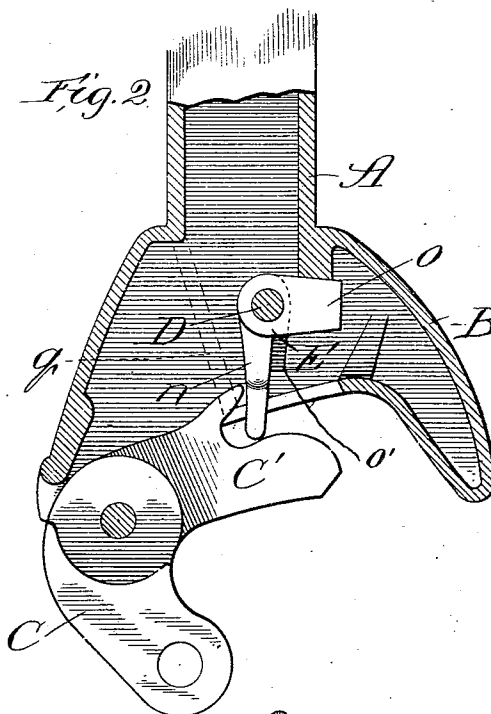
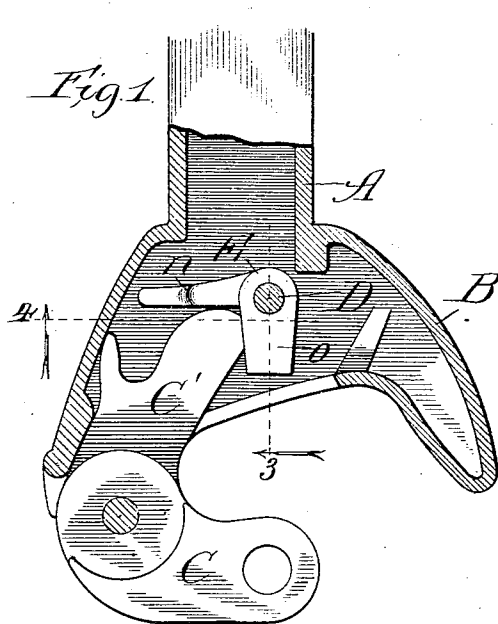


(No Model.)

J. E. FORSYTH.
CAR COUPLING.

No. 563,152.

Patented June 30, 1896.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOSEPH E. FORSYTH, OF CHICAGO, ILLINOIS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 563,152, dated June 30, 1896.

Application filed February 21, 1896. Serial No. 580,168. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH E. FORSYTH, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Car-Couplers, of which the following is a specification.

My invention relates to an improvement in car-couplers of the Janney type; and my object is to provide novel means of superior construction for locking the swinging knuckle and for throwing it out into coupling position by the act of unlocking.

Referring to the accompanying drawings, Figure 1 is a plan sectional view of a car-coupler of my improved construction, showing the knuckle in its closed position, the section being taken at the line 1 on Fig. 4 and viewed in the direction of the arrow; Fig. 2, a similar view with the knuckle in its open position; Fig. 3, a vertical section taken at the line 3 on Fig. 1 and viewed in the direction of the arrow; Fig. 4, a transverse section taken at the line 4 on Fig. 1 and viewed in the direction of the arrow, and Fig. 5 a perspective view of the combined lock and opener device.

A is the draw-bar of usual or any suitable construction, terminating in the hollow draw-head B, at one side of which is pivotally secured, in the usual or any suitable manner, the knuckle C. For a reason hereinafter explained I prefer to bifurcate the tailpiece C' of the knuckle; but this is not an indispensable feature of my invention.

D is a pin passing vertically through the draw-head B to one side of its longitudinal center, being confined in the openings *r* and *r'*, through which it passes in the top and bottom of the draw-head to have vertical play, but against rotary movement, and to that end having its upper portion angular in cross-section to conform to the opening *r*. Of course rotation of the pin D may be otherwise provided against without departure from my invention. On the under side of the top of the draw-head is provided a rib *q*, affording a species of cam by being inclined along its lower edge in an upward and forward direction and by inclining horizontally from the

knuckle-pivot side of the draw-head to the front thereof adjacent to the pin D. Within the draw-head the pin D is cylindrical or rounded in cross-section, and carries, loosely, the combined lock and opener device E in the form of a bell-crank loosely surrounding at its angle, where it has a lower sleeve extension *p*, the pin D, one wing of the bell-crank affording the locking-block *o*, shown as rectangular in cross-section, and the other wing affording the opener *n*. On the bottom of the draw-head, in its inner side at the opening *r'*, is formed a socket *o'* to receive the locking-head *o*.

The operation of my improved car-coupler is as follows: When the knuckle is in coupling position, with the tailpiece at its farthest position within the draw-head, the opener *n* is behind the tailpiece while, the locking-head *o* is down in its socket *o'* in front of the tailpiece to obstruct it against turning to permit the knuckle to open. To unlock the coupler, the pin D is raised, and in rising it lifts the device E, (owing to its confinement against slipping on the pin lengthwise thereof by the cotter-pin *m* engaging the extension *p*,) thereby raising the lock *o* clear of the socket *o'* and the opener *n* into engagement with the lower end portion of the cam-rib, whereby, in continuing to raise the pin, the consequent pressure of the opener against the rigid cam-rib *q* causes the device to turn on the pin, thereby turning the raised lock *o* past the socket *o'* out of the way of the tailpiece of the knuckle, and the opener *n* against the rear side of the tailpiece to throw out the knuckle into position ready for coupling. In this position of the device E the opener is in the return path of the tailpiece, which engages it, when the knuckle is returned to its coupling position, and thereby swings the device E about on the pin D till the lock *o* coincides with its socket *o'*, into which it then drops by gravity and prevents the outward throw of the knuckle by obstructing the tailpiece.

The purpose of bifurcating the tailpiece C' is to confine in it the opener *n*, so that the locking device cannot, when the knuckle is out, be turned independently of the knuckle

accidentally into position to obstruct the latter at its tailpiece when the knuckle is swung inward for coupling.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a car-coupler, the combination with the draw-head and swinging knuckle, of a pin supported vertically in the draw-head to have longitudinal play, a socket in the base of the draw-head near the end of the outward throw therein of the tailpiece of the knuckle, and a locking-block rotatably supported on said pin in the draw-head to be raised out of said socket by raising the pin, and turned, by opening the knuckle out of the return path of the tailpiece and to drop by gravity into said socket when brought coincident therewith and afford an obstructing abutment to the front side of said tailpiece when the knuckle is in coupling position, substantially as described.

2. In a car-coupler, the combination with the draw-head and swinging knuckle, of a pin supported vertically in the draw-head to have longitudinal play, a cam-rib on the top within the draw-head, inclining along its lower edge in an upward and forward direc-

tion and extending from the knuckle-pivot side of the draw-head to the front thereof adjacent to said pin, a locking-block and an opener rotatably supported on said pin, and a socket in the base of the draw-head near the end of the outward throw therein of the tailpiece of the knuckle, into which socket said block drops by gravity, when brought coincident therewith, to afford an obstructing abutment to the front side of said tailpiece when the knuckle is in coupling position, substantially as described.

3. In a car-coupler, the combination with the draw-head and swinging knuckle, of the vertically-movable pin *D*, a cam-rib *q* in the draw-head, a bell-crank-shaped combined lock and opener device *E* rotatably confined at its angle on said pin, one wing thereof forming the lock *o* and the other wing forming the opener *n*, and a socket *o'* for said lock in the base of the draw-head, the whole being constructed and arranged to operate substantially as described.

JOSEPH E. FORSYTH.

In presence of—

J. N. HANSON,

J. H. LEE.