

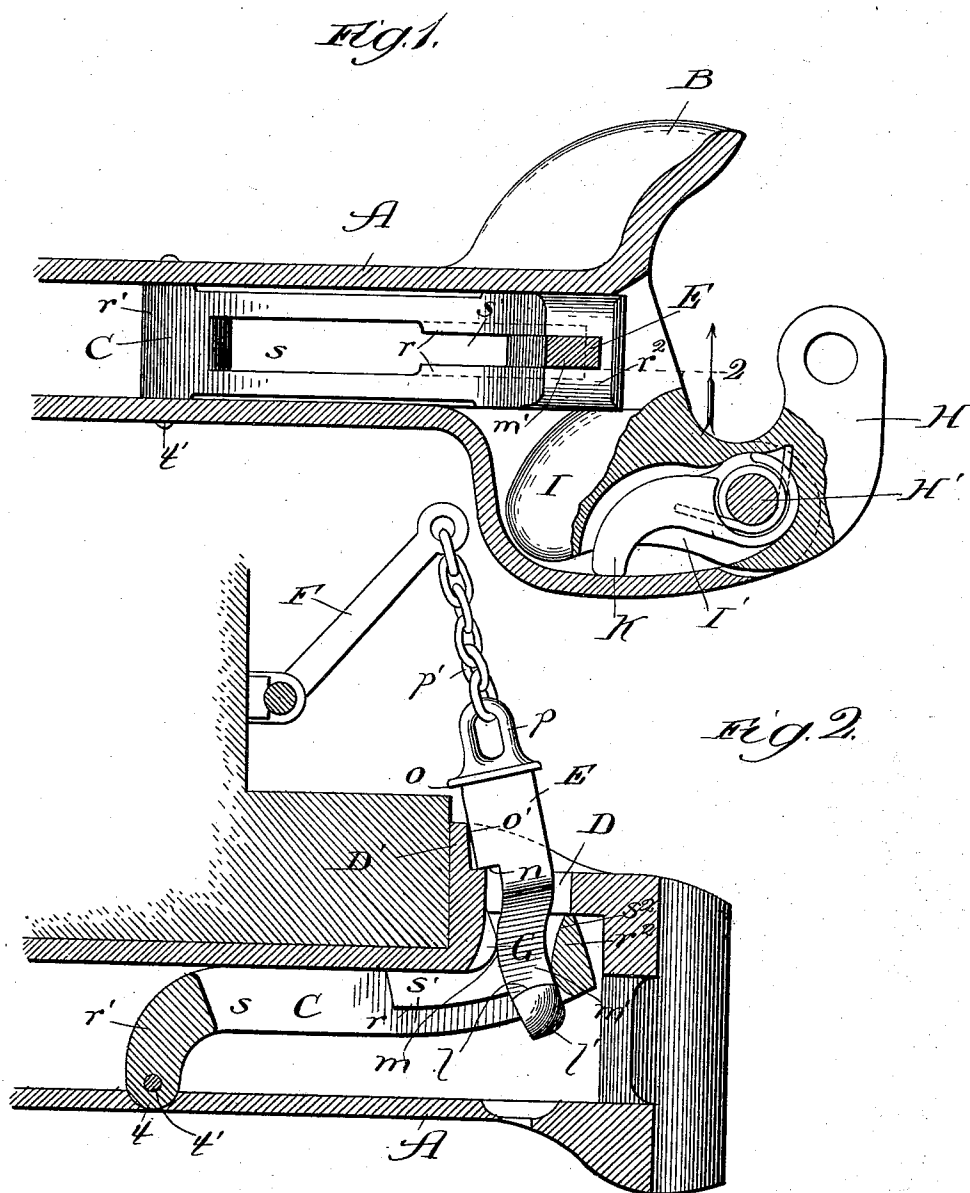
(No Model.)

2 Sheets—Sheet 1.

W. S. SCHROEDER & A. P. LINDHOLM.
CAR COUPLING.

No. 509,104.

Patented Nov. 21, 1893.



Witnesses:
E. C. Gaylord,
C. J. Zimmerman.

Inventors:
William S. Schroeder,
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Attys

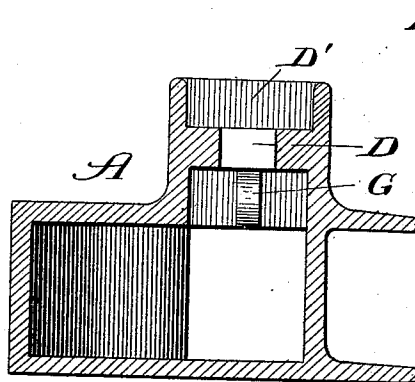
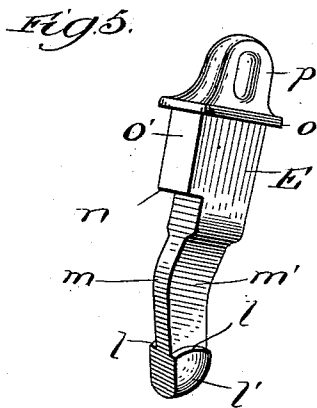
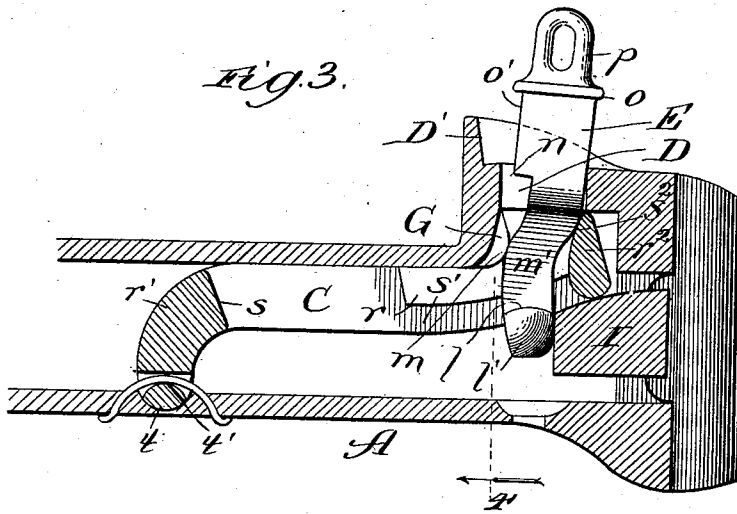
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UNITED STATES PATENT OFFICE.

WILLIAM S. SCHROEDER AND ANDREW P. LINDHOLM, OF CHICAGO, ILLINOIS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 509,104, dated November 21, 1893.

Application filed June 16, 1893. Serial No. 477,790. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM S. SCHROEDER and ANDREW P. LINDHOLM, citizens 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.

Our invention relates to an improvement in car couplers of the kind employing a pivoted knuckle, locking block and locking pin, the latter of which is lifted by a lever operated from the car and is intended automatically to lock the knuckle when the companion member of the coupling is introduced.

Our invention has for its object, first, to improve the car coupler having the parts described to render the same more sensitive and to insure the locking of the knuckle under all circumstances; and, secondly, to insure the retention of the knuckle in a position to receive the companion member of the coupler when the parts are uncoupled.

The invention consists, generally, in a car coupler comprising the pivotally secured knuckle and coupler head, a locking bar extending longitudinally of the coupler and slotted to receive the coupling pin, said coupling pin and the wall of the coupler body adjacent thereto being given a special configuration for a purpose presently described.

Our invention consists further in a coupler comprising the coupler head, the pivoted knuckle, the locking bar and the locking pin, and a spring finger engaging the pivoted knuckle and operating to hold the latter in a distended position after uncoupling.

The invention consists further in the general and specific details of construction and combinations of parts, all as hereinafter more fully set forth.

In the drawings—Figure 1 is a broken perspective view of a coupler constructed in accordance with our invention made partly in section to show the interior construction. Fig. 2 is a sectional side elevation taken on the line 2 of Fig. 1 and viewed in the direction of the arrow. Fig. 3 is a vertical section

taken through the coupler at the forward end thereof. Fig. 4 is a transverse vertical section taken on the line 4 of Fig. 3 and viewed in the direction of the arrow. Fig. 5 is a perspective view detached of a locking pin.

A represents the draw-bar made hollow, as shown, and having the coupler head B. The draw-bar A is provided with a cavity *t* for the reception of the rear end of the locking bar C. The locking bar C comprises a bar having the longitudinal slot *s* reduced in width at the forward end, as indicated at *s'* in the upper half thereof by forming shoulders *r*, as indicated in Figs. 1, 2 and 3. The rear end of the bar C curves downward, as shown at *r'*, and the forward end extends upward, as shown at *r''*.

The purpose of the slot *s* in the locking bar is to receive the lower end of the coupling pin, and the purpose of the shoulders *r* and reduced slot *s'* is to prevent the coupling pin from being withdrawn, which is accomplished by the construction given to the pin as presently described.

The coupler head is provided with the usual pin receiving opening D, in which is introduced the coupling pin E. At the upper extremity of the opening D a ledge D' is formed. The pin E is of peculiar construction and comprises the following features: The upper end is slotted, as shown at *p* to receive the chain *p'* connected with the operating lever F. Below the slotted end a flange *o* is formed below which the pin is given the configuration of the slot D, as shown at *o'* in the figures. Below the part *o'* part of the rear of the pin is cut away to provide a shoulder, as indicated at *n*, below which cut away part *n* a cam-like curvature is given to the rear side of the pin at *m*, while the metal of the pin in this part is reduced in width, as indicated at *m'*. Below the reduced part *m'* the pin is again enlarged to produce the curved shoulders *l* and the extreme lower extremity of the pin has a curved and cam-like forward face as indicated at *l'*.

In the square opening D of the coupler there is formed on the rear wall thereof a cam-like

projection G, the purpose of which will presently appear, and the forward or outward end of the slot *s* of the locking bar C is also inclined upward and outward, as shown at *s*².

5 H represents the knuckle, which is of usual construction in the main, except as herein-
after specified, and is held to the coupler by
the pin H' in the usual manner. The rear
end of the knuckle H terminates in a rounded
10 and cam-like tail-piece I which is provided
with a slot or recess I' in which is introduced
a spring controlled finger K pivotally secured
upon the bolt H'. The location and arrange-
ment of the spring controlled finger K are such
15 as to give to the knuckle H normally a tend-
ency to extend outward to the uncoupling
position, this tendency being overcome when
the coupling is effected by the engagement of
the tail-piece I with the wall of the locking
20 bar C.

The operation of the device is as follows:
When the pin E is raised by the lever F for
the purpose of uncoupling, the pin assumes
the position indicated in Fig. 2; that is to say,
25 the pin is inclined backward by reason of the
engagement of the cam *n* with the projection
G and the shoulder formed by the notch *n*
engages the ledge D'. The pin in turn by
reason of the engagement of the shoulders *l*
30 with the shoulder *r* on the locking bar serves
to hold the latter in elevated position, thus to
permit the tail-piece I of the knuckle H to
pass under the forward end of the locking
bar C. In passing, however, the curved ex-
35 tremity of the tail-piece I engages the cam
face *l'* at the lower extremity of the pin E
moving the latter on the pivot afforded be-
tween the projection G and the cam *n*, and
causing the pin to descend until restrained
40 in its descent by engagement with the in-
clined inner wall *s*² at the forward end of the
slot in the locking bar C. In this position,
shown in Fig. 3, the knuckle is ready upon
receiving pressure at the center of the coup-
45 pling jaws to move back to locking position,
which movement by withdrawing the tail-
piece I from underneath the locking bar C
allows the locking bar to fall into the path
of the tail-piece, carrying with it the pin E.
50 It is then in the position indicated in Fig. 1.

In order to insure the retention of the
knuckle in the open position indicated in
Fig. 3, the spring finger K is employed. Upon
an examination of Fig. 1, it will be apparent
55 that the tendency of this spring finger K to
distend the knuckle H is resisted by the en-
gagement of the tail-piece I with the locking
bar C. When the locking bar is lifted it is
quite obvious that the spring finger will op-
60 erate to force inward the tail-piece and hold
it in this position until force shall be applied
to overcome its spring tension.

Any convenient means of holding the lock-
ing lever in position with relation to the coup-
55 pler may be employed. In Figs. 2 and 3 such
a means is shown in a pin *l'* passing through

the wall of the draw-bar and through a per-
foration in the end of the locking bar.

The invention herein described is not lim-
ited to specific details of construction; but 70

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

1. In a car-coupler, the combination with
the coupler-head and the knuckle, a coup-
pling-pin entering the coupler-head and a pro- 75
jection G on the coupler-head, as and for the
purpose described.

2. In a car-coupler, the combination with
the coupler-head and the knuckle, a coup-
pling-pin entering the coupler-head and hav- 80
ing the cam-like projection on its rear side *m*,
as and for the purpose described.

3. In a car-coupler, the combination with
the coupler-head having a projection G, for
the purpose described, and with the knuckle, 85
of a coupling-pin having the cam-like projec-
tion *m*, substantially as set forth.

4. In a car-coupler, the combination with a
coupler-head having the opening to receive
the coupler-pin and ledge D' and with the 90
knuckle, of a coupling-pin entering said cou-
pler-head having a shoulder, whereby it may
rest on the ledge while elevated, and means
for causing the coupler pin to be inclined in
the act of elevation to cause it to rest upon 95
the ledge D', substantially as set forth.

5. In a car-coupler, the combination with a
coupler-head having the opening for the coup-
pler pin and with the knuckle having the tail-
piece, of a coupler-pin entering said coupler 100
head provided with a shoulder to rest on the
upper face of the coupler-head, and a cam
faced lower end, and means for causing the
coupler-pin to be inclined when lifted, the
parts being arranged substantially as de- 105
scribed, whereby the movement of the tail-
piece of the knuckle turns the inclined coup-
pler-pin to a vertical position, substantially as
described.

6. In a car-coupler, in combination with a 110
coupler-head and the locking bar therein pro-
vided with a slot and shoulder and with the
knuckle provided with the tail-piece, of a
coupling-pin provided with a shoulder to en- 115
able it to rest upon the upper edge of a coup-
pler-head, provided also at its lower end with
an enlargement having a lower cam face, and
means, substantially as described, for causing
the coupling-pin when elevated to incline and
be supported through the medium of the 120
shoulder upon the coupler-head, substantially
as and for the purpose described.

7. In a car-coupler, the combination with a
coupler-head and knuckle having the tail-
piece, and the locking-bar having the slot and 125
shoulder and provided at its forward end with
the outwardly inclined inner wall, of a coup-
pling-pin having a shoulder in its rear side, a
cam faced projection below its shoulder and
an enlargement at its lower end having a 130
lower cam face, substantially as described.

8. The combination with a coupler-head,

the locking-bar C therein and the coupling-pin E entering said locking-bar and sustaining the same, of a knuckle H having the tail-piece I presenting a cam face to engage the lower extremity of the coupling-pin, and a spring finger K connected with the knuckle and having a tension normally to distend the knuckle when the tail-piece is relieved from

the restraint of the locking-bar, substantially as described.

WILLIAM S. SCHROEDER.
ANDREW P. LINDHOLM.

In presence of—

M. J. FROST,
W. N. WILLIAMS.