

No. 685,802.

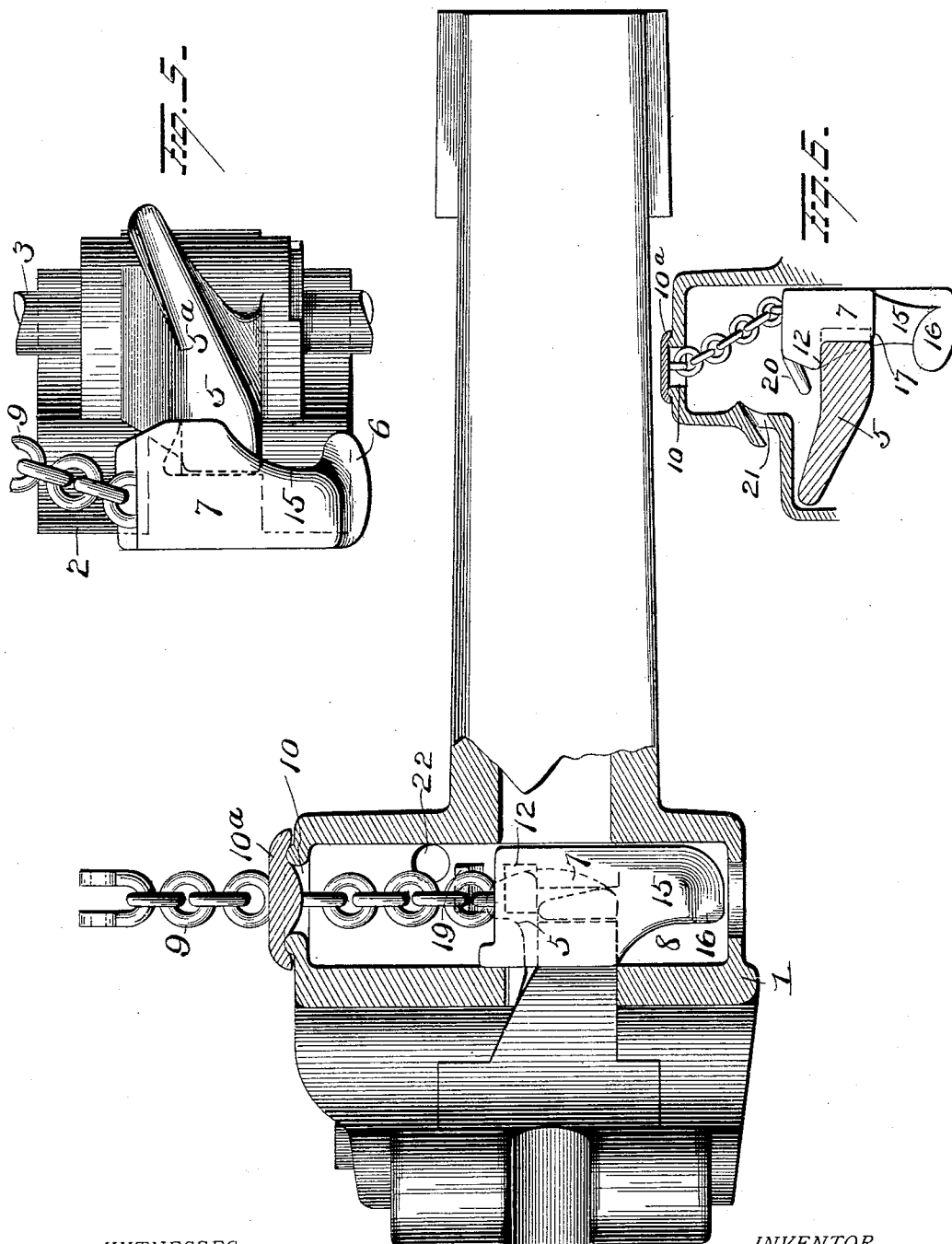
Patented Nov. 5, 1901.

J. TIMMS.  
CAR COUPLING.

(Application filed July 20, 1901.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES

*E. J. Nottingham*  
*G. F. Downing*

INVENTOR

*J. Timms*  
*By H. A. Seymour*  
Attorney

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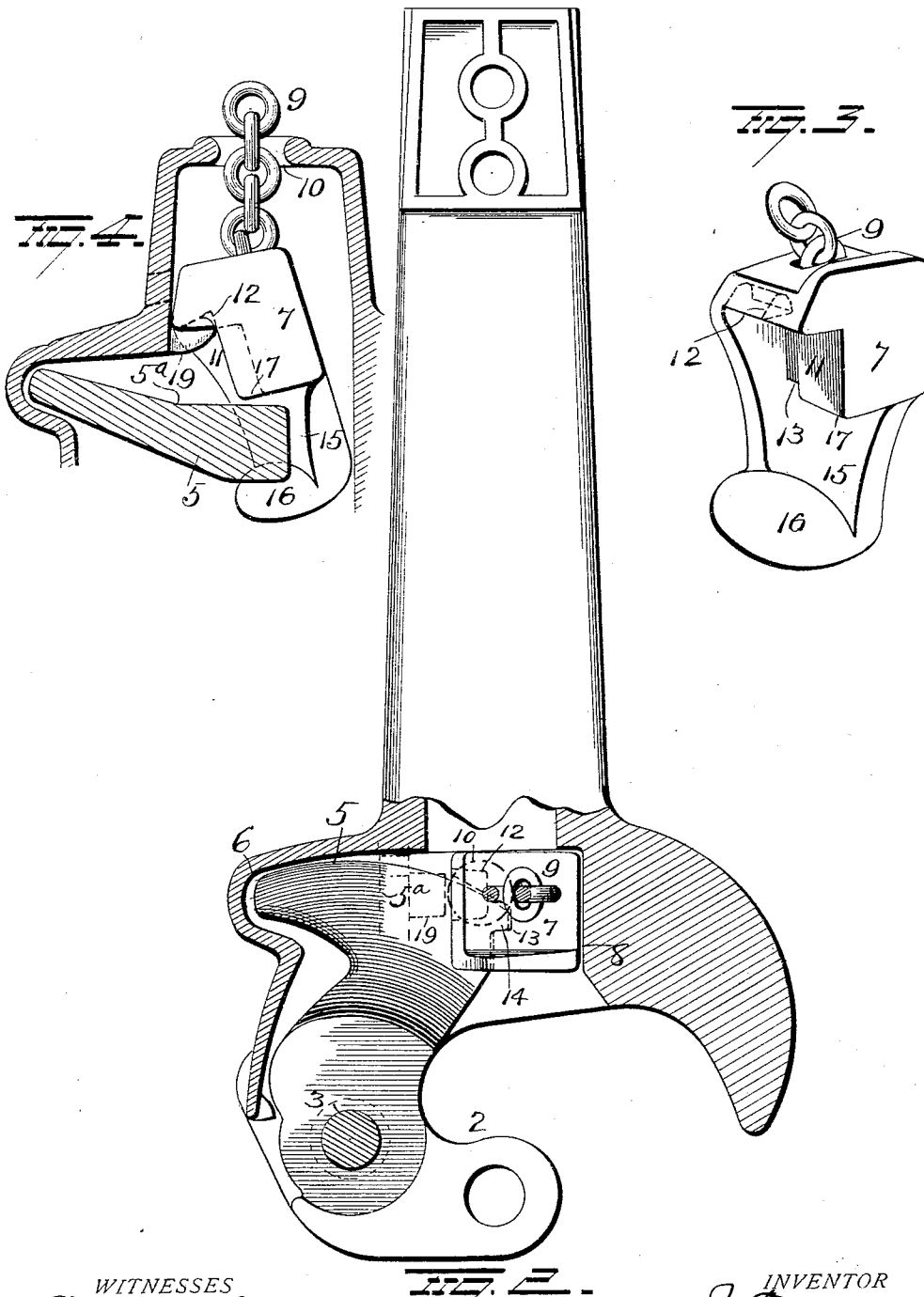
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*E. Nottingham*  
*C. F. Downing*

INVENTOR  
*J. Timms*  
*By H. A. Seymour*  
Attorney

# UNITED STATES PATENT OFFICE.

JAMES TIMMS, OF COLUMBUS, OHIO, ASSIGNOR TO THE BUCKEYE MALLE-  
ABLE IRON AND COUPLER COMPANY, OF COLUMBUS, OHIO.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 685,802, dated November 5, 1901.

Application filed July 20, 1901. Serial No. 69,116. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES TIMMS, of Colum-  
bus, in the county of Franklin and State of  
Ohio, 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, one object of the same being to  
provide improved locking mechanism which  
when operated will throw open the knuckle,  
but which can be so set as to permit the knuc-  
kle to be opened by a pull thereon.

A further object is to provide a single block  
which can be operated to lock the knuckle,  
open the same, and which can be set in posi-  
tion to permit the knuckle to be opened, and  
is designed particularly as an improvement on  
my Patent No. 678,145, granted me July 2, 1901.

With these objects in view the invention  
consists in certain novel features of construc-  
tion and combinations and arrangements of  
parts, as will be more fully hereinafter de-  
scribed, and pointed out in the claims.

In the accompanying drawings, Figure 1 is  
a side view, partly broken away, illustrating  
my improvements. Fig. 2 is a top view, partly  
in section. Fig. 3 is a view illustrating the  
locking-block removed. Fig. 4 is a view show-  
ing the latter set. Fig. 5 is a view in section  
looking at the rear of the knuckle, showing  
the locking-block in its locked position; and  
Fig. 6 is a view of a modified form of my in-  
vention.

1 represents the coupling-head, to which is  
pivotally connected the knuckle 2 by a pin 3,  
and said knuckle 2 being made on its inner  
end with a tail 5, curved approximately con-  
centric with the axis of the knuckle, and the  
coupling is made with a hollow enlargement  
6 to receive the tail of the knuckle when the  
latter is closed.

7 represents the angular locking-block,  
which is mounted to move in a chamber 8 in  
the coupling-head and is confined and oper-  
ated within said chamber, so that no portion  
of said block will project beyond the wall of  
the head, where it would be liable to be broken.  
The locking-block thus confined is operated

by a chain 9, secured thereto and extended  
up through an opening 10 in the coupling-  
head, which opening is located to one side of  
the center of the block 7, so as to give a lat-  
eral as well as a vertical pull on the block to  
tip it to an inclined position, as will more fully  
hereinafter appear. A suitable cap or closure  
10<sup>a</sup> is secured on one of the links of the chain  
to close the opening 10 when the knuckle is  
locked and prevent the chain from falling  
into the coupling-head. The block 7 is cham-  
bered, as at 11, to form the shoulder 12, which  
latter is beveled or undercut, as shown in Fig.  
4, to engage the hook or seat 19, secured to or  
formed integral with the head 1 above the  
tail of the knuckle, the upper face of the hook  
or seat 19 being similarly curved or beveled,  
so as to positively retain the block in its ele-  
vated position against accidental displace-  
ment. The block is made with a vertical  
groove 13 to receive a tongue 14 on the knuckle  
and securely lock the same in the head. The  
lower portion of the block 7 is cut away or re-  
cessed, as at 15, sufficiently to permit the tail  
of the knuckle to pass freely between a be-  
veled or inclined lip 16 at the lower end of the  
block and a shoulder 17, formed by the rec-  
ess in the block and located about midway  
between the ends thereof, for a purpose which  
will more fully hereinafter appear.

When it is desired to open the knuckle, the  
chain 9 is pulled upward to lift block 7, draw-  
ing the grooved portion 13 thereof free from  
the tongue 14, and when the tail 5 of the  
knuckle aligns with the recessed portion 15  
of the block a further upward pull on the  
chain will draw the lip 16 in an oblique di-  
rection against the beveled or inclined lower  
face of the tail 5, and owing to the cam action  
of the lip 16 against the tail of the knuckle  
throw the latter to its extreme open position.  
When the pull on the chain is released, the  
shoulder 17 will rest on the knuckle-tail and  
remain thereon until the knuckle is closed,  
when the block will fall into its locked posi-  
tion above described.

If cars are coupled together and it is de-  
sired to unlock the knuckle without opening  
the same, the block 7 is drawn up far enough  
to align the tail of the knuckle with the re-  
cessed portion 15 thereon, the chain exerting

a lateral as well as a vertical pull on the block, tilting it and pulling the lip 12 over onto the seat 19, secured to or integral with the draw-head in a position above the tail of the knuckle, as clearly shown in Figs. 1 and 4, and as the lip 12 and the seat 19 are slightly inclined the block will be retained in this inclined position, and thereby make it difficult to shake or jar it from off its seat. When the cars pull apart, the knuckle will be drawn to its open position, and the tail thereof will move through the recessed portion 15 of the block and support the latter during its opening and closing movement.

The upper face of the tail of the knuckle from the tongue 14 rearwardly is approximately flat or horizontal, as shown at 5<sup>a</sup>, for the purpose of permitting the knuckle to turn in its opening movement some little distance before engaging the shoulder 17 of the locking-block for dislodging the latter from its set position, and the upper surface of the curved edge of the tail from the point 5<sup>a</sup> to its rear end is upwardly inclined to engage the shoulder 17 of the locking-block and disengage it from its seat 19. The upper surface of the tail between the pivot-pin and the outer curved edge is made slightly convex or is inclined upwardly from its curved edge toward the pivot-pin of the knuckle, so as to engage the shoulder 17 near its free edge or its edge adjacent to the tail, and thus cause the locking-block to tip outwardly and carry the lip 12 out of the path of the hook 19, so that in the locking action of the knuckle when the locking-block is supported wholly on the tail of the knuckle the lip 12 descends in a plane outside of the plane of the seat 19, thus permitting the block to fall to its locked position without interference.

The locking-block is, as before stated, chambered to form a beveled shoulder 12, which when the block 7 is raised so that the locking-surface thereof clears that of the knuckle-arm it (the lock) will by reason of the diagonal or oblique movement given it by the chain engage with or rest on the corresponding seat or projection 19, formed on the coupling-head, and thus hold the lock in a suspended position independent of the knuckle-tail when the latter is in its closed or locked position. The locking-block 7 maintains this independent position relative to the knuckle-tail up to a position of the latter between that of fully closed and fully opened.

As the knuckle-tail swings outwardly a point in its movement is reached when it engages the locking-block, and continuing its movement moves the latter up and away from its support, completely disengaging the two, as before explained, and thus carrying the lock on the upper surface of the knuckle-tail and putting it in a position to drop into a locked position when the knuckle-tail shall have been swung to a closed or locked position.

In Fig. 6 I have shown a construction where-

in the locking-block is provided with a projection 20, which is adapted to pass through an opening 21 in the wall of the coupling-head. In both instances the support of the locking-block is at or near the top of the latter, so as to permit it to swing on and off the support with the normal movements of the knuckle-tail within its housing.

It sometimes happens that after the lock has been set it becomes necessary to again lock the knuckle without permitting the latter to open.

As previously explained, after the lock has been set the lock remains so until released by the opening of the knuckle. Should it therefore be desirable or necessary to lock the knuckle without first opening same, this can be accomplished by inserting the finger, stick, or any other object through the hole 22 in the coupler-head and pushing the lock from its seat. With the construction shown in the modification, Fig. 6, this can be accomplished by simply pushing the tongue on the block, which is exposed through the side, off its supporting-seat.

Various other slight changes might be resorted to in the general form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I would have it understood that I do not wish to be limited to the precise details set forth, but consider myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of my invention.

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

1. In a car-coupling the combination with a draw-head, and a knuckle mounted therein, of a locking-block having a shoulder located at or near its top and adapted when elevated to engage a seat within the coupling-head above the knuckle for suspending the block in a position to be engaged by the tail of the knuckle as the latter moves to its open position.

2. The combination with a coupling-head and a knuckle pivotally supported therein, of a locking-block inclosed within said head and provided at or near its top with a shoulder adapted to engage a seat within the head above the tail of the knuckle, the said block normally located in position to lock the knuckle and means thereon for throwing the knuckle open, substantially as set forth.

3. In a car-coupling the combination with a draw-head and knuckle pivoted therein, of a lock inclosed wholly within the walls of the draw-head and provided with a beveled or inclined lip to engage the knuckle and open it when the lock is raised, means independent of the knuckle for suspending the block in an unlocked position and for retaining it so suspended until released by the knuckle-tail in its outward-opening movement, substantially as set forth.

4. In a car-coupling the combination with draw-head and a pivoted knuckle, the draw-head having a seat above the knuckle and an opening through its wall adjacent to the seat, of a locking-block for locking the knuckle in place and provided near its upper end with a shoulder, which when the block is raised to uncoupling position, rests on said seat in the draw-head.

5. In a car-coupling a knuckle having a rearwardly-projecting tail, the said tail having its lower face inclined upwardly from its front to its rear end, and its upper face approximately horizontal from its front edge rearwardly a distance to permit the tail to move within a recess in the locking-block without engaging the latter, and then inclined upwardly so as to make contact with said locking-block.

6. In a car-coupling the combination with a draw-head, and a knuckle pivotally mounted therein, and having a rearwardly-projecting tail, of a locking-block inclosed within the draw-head, the said block provided with a beveled lip to engage the tail of the knuckle, said tail being constructed to permit the block

to remain inert during the early opening movement of the knuckle, and by the continued movement of said tail, to be disengaged from its seat and deposited on the tail and maintained thereon in a position to lock automatically during the closing movement of the knuckle.

7. In a car-coupling, the combination with a draw-head and a pivoted knuckle, of a locking-block inclosed entirely within the draw-head and provided with a beveled lip to engage the tail of the knuckle and open the knuckle, said locking-block normally disposed in position to lock the knuckle, rigid supporting means within the draw-head to hold the locking-block out of its locked position, and a tail on the knuckle to release the locking-block from said unlocked position.

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

JAMES TIMMS.

Witnesses:

GEO. F. DOWNING,  
R. S. FERGUSON.