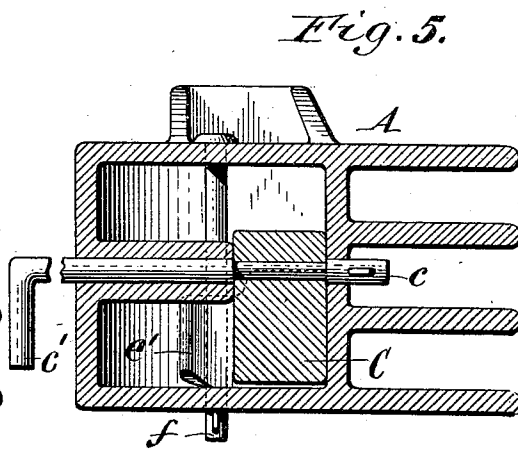
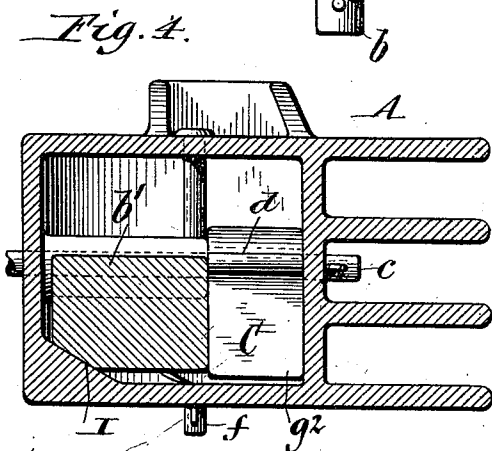
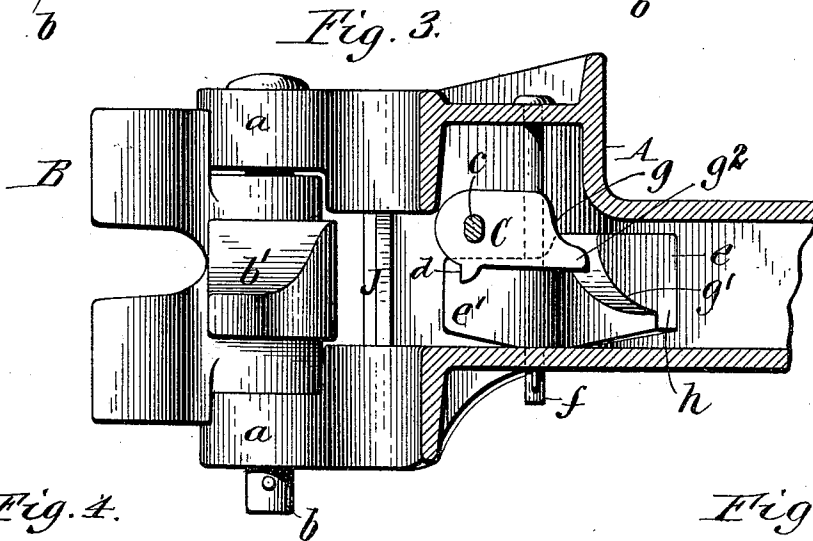
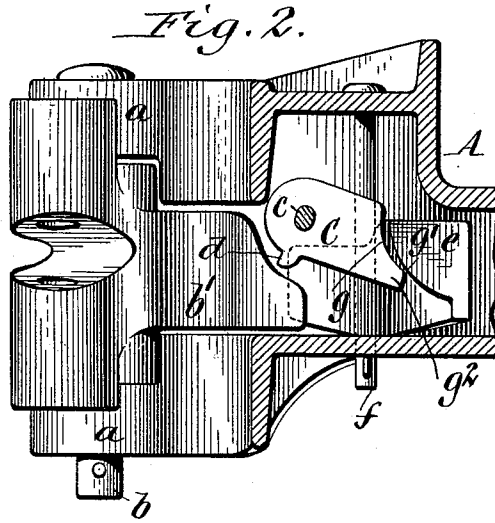
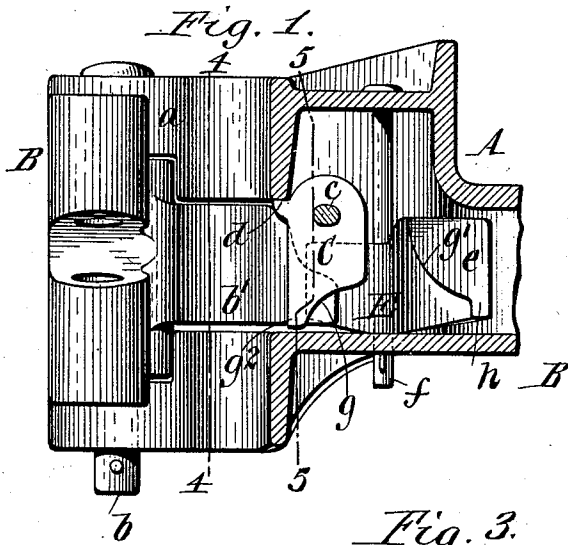


# W. T. WILSON. CAR COUPLING.

No. 521,968.

Patented June 26, 1894.



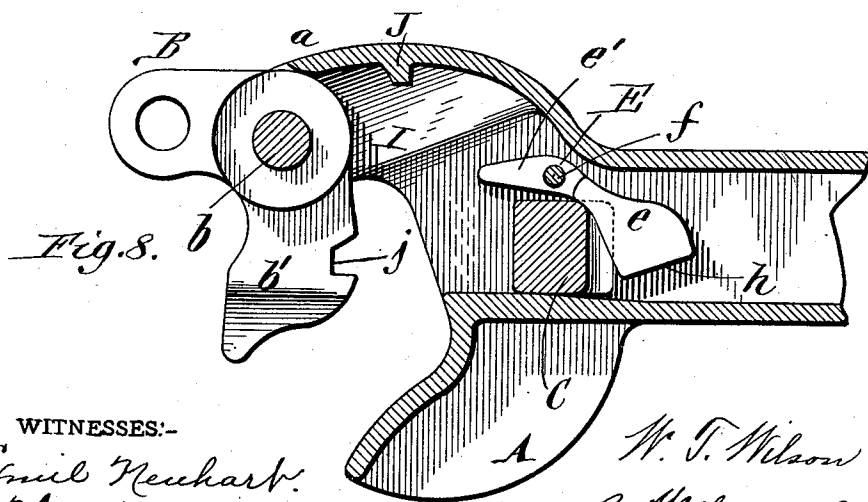
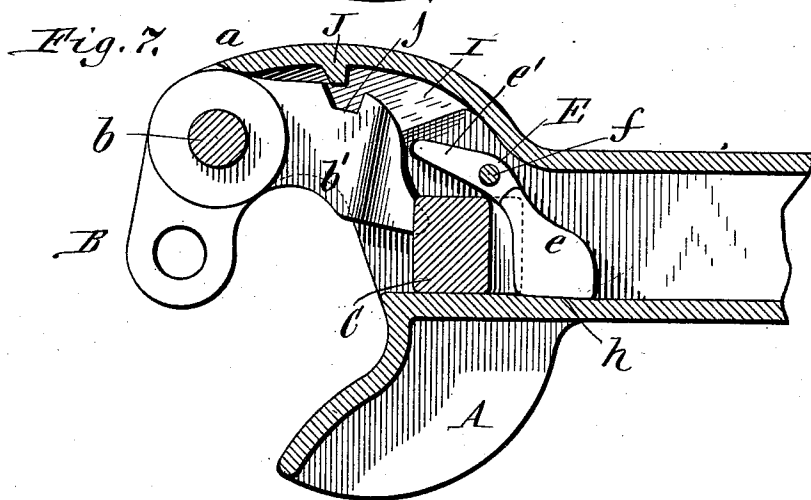
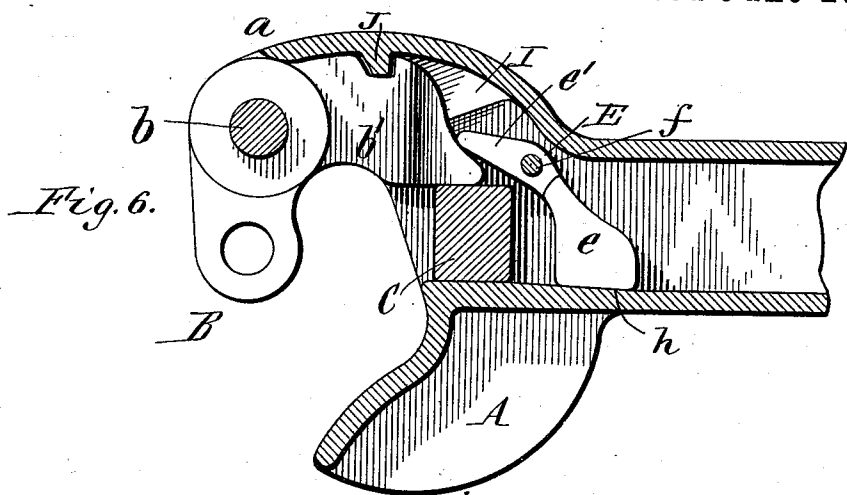
Emil Meuhart  
Theo. L. Popp. WITNESSES.

W. T. Wilson INVENTOR.  
By Wilhelm Arnold ATTORNEYS.

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WITNESSES:-

*Emil Neuhart.*  
*Theo. L. Popp.*

*W. T. Wilson* INVENTOR.

*By Wilhelm Bommert* ATTORNEYS.

# UNITED STATES PATENT OFFICE.

WILLIAM T. WILSON, OF BUFFALO, NEW YORK, ASSIGNOR OF ONE-HALF TO  
JOHN S. O'SHEA, OF SAME PLACE.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 521,968, dated June 26, 1894.

Application filed December 18, 1893. Serial No. 493,903. (No model.)

### *To all whom it may concern:*

Be it known that I, WILLIAM T. WILSON, a citizen of the United States, and a resident of Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Car-Couplings, of which the following is a specification.

This invention has more especial reference to twin car couplers of that class which consists essentially of a pivoted coupling jaw, an automatic lock for holding the jaw in its coupled position and a kicker or shifting lever for throwing the jaw to its uncoupled position when released by the lock.

The object of my invention is to produce a coupler of this character in which the lock and shifting lever can be easily operated; and in which the coupling jaw can be unlocked without operating the shifting lever.

In the accompanying drawings consisting of two sheets, Figure 1 is a longitudinal sectional elevation of my improved coupling showing the coupling jaw in its closed or locked position. Fig. 2 is a similar view showing the lock swung back sufficiently to unlock the coupling jaw. Fig. 3 is a similar view showing the lock swung back to the position in which it operates the shifting lever of the coupling jaw. Figs. 4 and 5 are vertical cross sections in lines 4-4 and 5-5, Fig. 1, respectively. Figs. 6, 7 and 8 are horizontal sections of the coupling, corresponding to Figs. 1, 2 and 3, respectively.

Like letters of reference refer to like parts in the several figures.

A represents the drawhead having in its front end the usual chamber in which the working parts of the coupler are arranged.

B is the coupling jaw or knuckle pivoted to the forwardly projecting bifurcated arm *a* of the drawhead by a vertical pin *b*, and having the usual locking arm or tongue *b'*.

C represents the lock or pawl which engages with the locking arm of the coupling jaw for holding the same in its closed or coupled position and which is arranged to swing vertically in the drawhead. The lock is secured at its upper end to a horizontal rock shaft *c* which is arranged transversely and journaled in the side walls of the drawhead. The outer end of this rock shaft is provided

with a crank arm *c'* for turning the same. In the normal position of the lock it hangs vertically in the path of the locking arm of the coupling jaw. The forward movement of the lock is limited by a nose or shoulder *d* formed on its front side and adapted to engage against the adjacent portion of the drawhead. The lower portion of the lock is free to swing rearwardly for the purpose of clearing the locking arm of the coupling jaw.

E represents a shifting lever which is operated by the lock and whereby the coupling jaw is kicked or moved into its open position preparatory to interlocking with an opposing coupler. This lever is pivoted upon a vertical pin *f* so as to swing horizontally and is provided with an actuating arm *e* arranged behind the lock and a shifting arm *e'* arranged behind the locking arm of the coupling jaw. The actuating arm of the shifting lever is arranged in close proximity to the rear side of the lock, and in order to enable the lock to move rearwardly a sufficient distance to clear the locking arm of the coupling jaw, without operating the shifting lever, the lower rear portion of the lock is cut away or recessed, as shown at *g*, which permits the lock to pass the actuating arm of the shifting lever during the first portion of its rearward movement. The front side of this actuating arm is provided with a convex bearing face *g'* against which the nose *g<sup>2</sup>* at the lower front portion of the lock is adapted to engage for throwing the actuating arm rearwardly during the last portion of the rearward movement of the lock. The actuating arm of the shifting lever is provided with a stop face *h* which is adapted to engage against the adjacent portion of the drawhead and limit the backward movement of the shifting arm. By forming a convex bearing face on the shifting lever against which the lock engages, the lock moves the shifting lever a sufficient distance to insure the full opening movement of the coupling jaw, without requiring a quick movement of the shifting lever or depending on the momentum of the coupling jaw. By providing the lock with a recess on its rear side, it can be shifted sufficiently to clear the locking arm and can also be arranged sufficiently close to the shifting

lever to avoid lost motion between the lock and the shifting arm. When two opposing car couplers are interlocked the coupling jaw occupies the position shown in Figs. 1 and 4, in which position the locking arm engages against the front side of the lock. When it is desired simply to release the coupling jaw without kicking it, the lock is moved rearwardly sufficiently to clear the locking arm, which permits the coupling jaw to open and become disengaged from the opposing coupler when the cars are separated. After the cars are uncoupled the lock returns to its normal vertical position, by gravity. In order to kick the coupling jaw to its open position, the lock is swung backward to its extreme limit, so as to move the actuating arm of the shifting lever rearward. This movement causes the shifting arm of the lever to move forwardly and throw the locking arm of the coupling jaw in the same direction, thereby opening the latter.

In kicking the coupling jaw it is customary to turn the rock shaft in the proper direction to swing the lock backward and then reverse the movement of the shaft for returning the lock to its normal position. As soon as the coupling jaw is unlocked by the rearward swing of the lock, it has a tendency to swing outward a short distance, as shown in Fig. 2, owing to the slightly inclined position of the drawhead, due to sagging, in which position the locking arm of the jaw stands in front of the lock. When the jaw assumes this position and the operator neglects to move the lock backward, sufficiently to operate the shifting lever for kicking the jaw, the lock, in being returned to its normal forward position, strikes the locking arm and moves it outward sufficiently to enable the jaw to effect an automatic coupling with the coupler of an opposing car.

If desired, an incline may be formed in the drawhead underneath the locking arm of the coupling jaw, upon which said arm rides during the last portion of its inward movement. By this provision the locking arm, when released, is caused to slide down this incline, assume the position in front of the lock, shown in Fig. 2, ready to be fully swung out by the return movement of the lock, in case the operator fails to actuate the shifting lever in attempting to kick the coupling jaw.

In the operation of coupling, the locking arm of the open coupling jaw is moved inward by the jaw of the opposing coupler thus deflecting and passing by the lock, which latter then drops into its normal position and holds the locking arm against forward movement.

By pivoting the lock at its upper end, it can be easily lifted for releasing the coupling jaw, and it drops by gravity into its operative position, when the rock shaft is released without requiring the use of inclines or other additional means for this purpose.

As the lock can be positively moved for-

ward as well as backward by the rock shaft, the coupling jaw may be thrown to its open position by swinging the lock forward in case the lock has not been previously opened a sufficient distance to operate the shifting lever.

J represents a vertical thrust rib formed within the drawhead opposite the rear side of the locking arm of the coupling jaw, for relieving the pin of the coupling jaw from strain. This rib is adapted to enter a recess *j* formed in the adjacent side of the locking arm. When the coupling jaw is closed, the rib of the drawhead fits into the recess of the locking arm. Any strain upon the coupling jaw is thus received by the front or rear faces of the thrust rib, as well as by the pivot pin of the coupling jaw, thereby relieving this pin and rendering the same less liable to be bent or broken. The thrust rib also serves to keep the coupling jaw in the locked position in the event of the pin being broken or mischievously removed. The front and rear faces of the rib and recess are flat and arranged substantially at right angles to the line of draft, as shown in the drawings, so as to avoid slipping of the said faces upon each other especially in the absence of the pivot pin of the coupling jaw.

I claim as my invention—

1. The combination with the drawhead and the coupling jaw, of a shifting lever having a vertical pivot on which it swings horizontally and provided with a shifting arm for throwing the jaw open and with an actuating arm, and a depending lock supported at its upper end on a horizontal pivot so as to be capable of swinging vertically rearward and upward with its lower end for striking the actuating arm, substantially as set forth.

2. The combination with the drawhead and the coupling jaw, of a shifting lever pivoted to swing horizontally and provided with a shifting arm for throwing the jaw open and with an actuating arm, a horizontal rock shaft journaled transversely in the upper portion of the drawhead, and a pivoted depending lock secured with its upper end to the rock shaft and capable of swinging rearwardly and upwardly with its lower end for striking the actuating arm of the shifting lever, and also downwardly and forwardly for striking the coupling jaw to complete the opening movement thereof, substantially as set forth.

3. The combination with the drawhead and the coupling jaw, of a depending lock pivoted at its upper end, capable of swinging rearwardly and having a shoulder adapted to engage against the drawhead for limiting its forward movement, and a shifting lever having an actuating arm arranged in the path of the lock and a shifting arm adapted to engage with the coupling jaw, substantially as set forth.

4. The combination with the drawhead and the coupling jaw, of a shifting lever having an actuating arm, and a shifting arm adapted to engage against the coupling jaw, and a

rearwardly swinging lock pivoted at its upper end and having a recess which permits it to pass said actuating arm during the first portion of its rearward movement, and a nose  
5 which engages against said actuating arm during the last portion of its rearward movement, substantially as set forth.

5. The combination with the drawhead and the coupling jaw, of a shifting lever having  
10 an arm adapted to engage with said coupling jaw and an actuating arm provided with a

convex bearing face, and a vertically swinging lock adapted to engage against the convex bearing face of said lever for shifting the same, substantially as set forth.

Witness my hand this 9th day of November, 1893.

WILLIAM T. WILSON.

Witnesses:

THEO. L. POPP,

CARL F. GEYER.

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