(No Model.)

C. A. POOLEY.

CAR COUPLING.

No. 462,413. Patented Nov. 3, 1891.

Fig. 1.

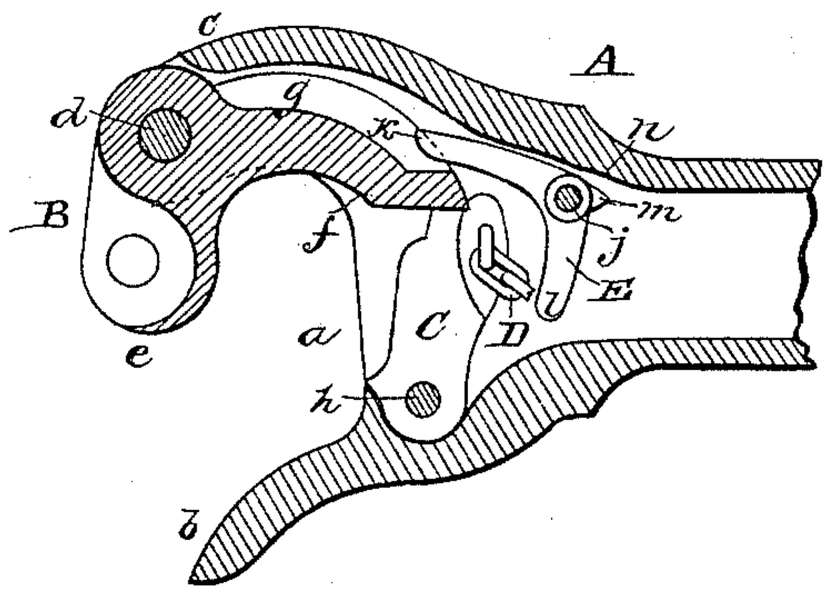
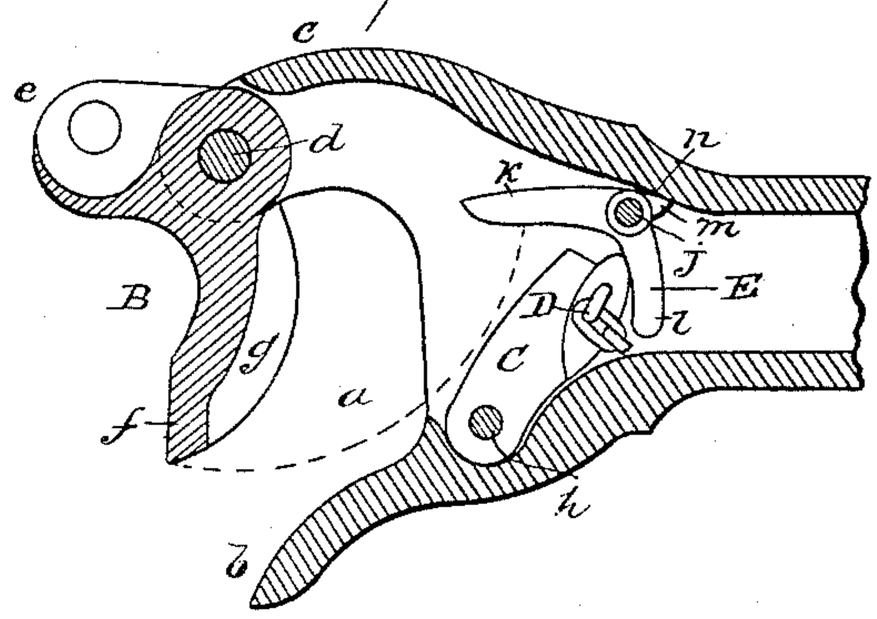


Fig. 2.



Witnesses

Jos. H. Blackwood

Carleton & Snell.

Inventor

Charles A. Pooley.

UNITED STATES PATENT OFFICE.

CHARLES A. POOLEY, OF BUFFALO, NEW YORK, ASSIGNOR TO JAMES F. GLUCK, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 462,413, dated November 3, 1891.

Application filed May 21, 1891. Serial No. 393,539. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. POOLEY, a citizen of the United States, residing in Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification.

The invention relates most particularly to that class of car-couplers having a swinging coupling-jaw and a lock for holding the jaw in the closed position, these couplers being known as "vertical-plane couplers." In such couplers it has been customary to provide springs or inclines for throwing the coupling-jaw to the open position and holding it there in position for engagement with an adjacent coupler, and it has also been usual to provide similar means for throwing the lock into position for locking the jaw when closed. These couplers have been unsatisfactory, in that the means employed could not always be relied on to shift the parts to the desired positions, as at times friction would prevent the desired movement of the parts, and at other times the inertia of the parts would be so great as to prevent their movement to the proper positions. This is particularly the case where inclines are provided on the coupling-head for shifting the coupling-arm and its lock. My invention aims to overcome these defects, to render the coupler certain and positive in its action, and to avoid the necessity of using inclines or springs for shifting the parts, and thereby the inconvenience and expense incident to these provisions on the coupling-head.

To this end in carrying out my invention I construct the coupler with provisions actuated in connection with one of its moving parts for imparting motion to other of its parts. These provisions in their preferred form consist of a swinging lever fulcrumed in the draw-head and projecting into the paths of the travel of the coupling-jaw and its lock, and constructed when the lock is moved to be actuated thereby and swing the jaw and when the jaw is moved to be actuated thereby and operate said lock. This provision insures the correct relative movement of the jaw and lock, and is capable of use either with a coupler having inclines or other means for shifting the parts or with one in which the parts are passive, in which case my invention alone will serve to move the parts to their desired positions. When used with a coupler having a swinging locking-pawl, one end of the operating-lever projects behind this pawl and the other end projects behind the locking-arm of the coupling-jaw, the parts being so proportioned that as the pawl is withdrawn from the locking position it strikes the end of the lever, thereby swinging it on its axis and causing its other end to move toward the locking-arm of the coupling-jaw and forcibly swing the latter outwardly. As the coupling-jaw is turned back in coupling, its locking-arm forces back the adjacent arm of the lever, thereby swinging it until its other arm pushes the locking-pawl into the locked position. By these means a positive relative movement of the coupling-jaw and locking-pawl is secured.

In the accompanying drawings, wherein my invention is shown as applied to a twin coupler of the Janney type, Figure 1 is a horizontal section of the coupling-head and jaw, the locking-pawl and lever being shown in plan and the parts being shown in the coupled position; and Fig. 2 is a similar view showing the parts in the uncoupled position.

Referring to the drawings, I will describe my invention as applied to a coupler of the Janney type, but from which the springs or inclines usually employed for shifting the parts are omitted.

A is the coupling-head, B the coupling-jaw pivoted therein, and C the locking-pawl for locking the jaw B. The head A may be constructed in any of the well-known forms, that shown having the usual forward recess *a*, inclosed by the guide-horn *b* at one side and the jaw-carrier *c* at the other side. The coupling-jaw B is pivoted in the head A at *d*, and consists of the coupling-arm *e* and the locking-arm *f*, the latter swinging within the head A when in the closed position and being locked by the pawl C. The jaw B has a recess or cavity *g* in the rear side of the locking-arm *f*. The pawl or other lock C is fulcrumed in the draw-head at *h* and swings horizontally toward and from the arm *f* of the jaw B,

having on its outer end a locking-face *i*, which engages with the end of the locking-arm of the jaw when the parts are in the coupled position. The operating-chain D is connected to the pawl for withdrawing it from engagement with the arm *f*.

As thus far described the parts are of the usual construction, with the exception of the provisions heretofore made for throwing the pawl into the locked position and the jaw into the open position, the use of these being rendered unnecessary by my invention.

According to my invention provisions are supplied for swinging the jaw to the open position when its lock is withdrawn and for swinging the lock into engagement with the jaw, these provisions being preferably actuated by the operation of one of said parts and being constructed to insure the positive relative movement of the parts during the locking and unlocking operations. In their simplest and preferred form these provisions consist of a lever E, fulcrumed on the draw-head at *j* and having arms *k* and *l*, the former projecting into the path of the locking-arm *f* of the jaw B and the latter into the path of swing of the lock or pawl C. The arm *k* projects in the rear of the locking-arm *f* and preferably enters the cavity *g* in the rear side thereof. The arm *l* projects in the rear of the pawl C and works against the back wall thereof. Provision is made for limiting the swing of the lever E on its fulcrum *j*, abutting shoulders being preferably formed on the lever and the coupling-head for this purpose. In the construction shown a lug *m* is formed on the hub of the lever E, which lug abuts against the inner wall *n* of the head A.

The lever E and the adjacent faces of the jaw B and pawl C are so constructed that when the coupler is in the coupled position the arm *k* of the lever lies between the locking-arm *f* of the jaw and the side wall of the coupling-head and the arm *l* of the lever lies behind the locking-pawl C. When in the uncoupled position, the arm *k* projects out into the path of the locking-arm *f* and the arm *l* is swung back toward the shank of the coupler and rests against the rear wall of the pawl C, while the latter is in the uncoupled position.

In operation, as the pawl C is withdrawn from engagement with the jaw B its rear wall strikes the arm *l* of the lever E and swings the latter as the pawl is drawn back by its chain D. As the lever E is swung its arm *k* is thrust forward and strikes the rear of the locking-arm *f* of the jaw, swinging the latter toward the open position with such force as to cause it to travel completely open by reason of its momentum. The parts then stand as seen in Fig. 2, the jaw and pawl being both passive and both therefore remaining in the unlocked position. As the jaw B is closed by engagement with an adjacent coupler, its locking-arm *f* swings past the pawl C and into the closed position, in doing which its rear wall strikes the arm *k* of lever E and swings the latter so that its arm *l* comes against the rear wall of the pawl C and thrusts the latter forward into engagement with the locking-arm of the jaw, thereby locking the parts in the coupled position, as shown in Fig. 1.

By the use of my invention the construction of the coupler is cheapened, while its operation is greatly improved, whereby the necessity of springs, inclines, and other analogous means for shifting the coupling-jaw and its lock is dispensed with and its operation is rendered positive. By its use passive coupling-jaws and locks therefor may be successfully used, thus simplifying the construction of the coupler and decreasing its cost.

My invention is susceptible of various modifications without departing from its essential features, and it will be understood that I do not limit myself to the particular construction herein set forth, (which, however, is the preferred form of my invention,) nor to its application to the style of car-coupler to which I have shown it applied. It can be successfully applied to various forms of car-couplers, and it can be modified in its application as experience or circumstances may require.

What I claim is—

1. A car-coupler comprising a head, a swinging coupling-jaw, and a swinging pawl for locking the jaw, in combination with provisions on the head actuated by said parts and constructed when said pawl is swung out of the locking position to swing said jaw toward the open position and when said jaw is swung closed to swing said pawl into engagement therewith.

2. A car-coupler comprising a head, a swinging coupling-jaw, and a swinging pawl for locking the jaw, in combination with a lever fulcrumed in said head, projecting into the paths of travel of said jaw and pawl, and constructed when said pawl is unlocked to be actuated thereby and to move said jaw and when said jaw is closed to be actuated thereby and to move said pawl.

3. A car-coupler comprising a head, a swinging coupling-jaw, and a swinging pawl for locking the jaw, in combination with a lever fulcrumed in said head, projecting into the paths of travel of said jaw and pawl, and constructed to be moved by the pawl when unlocking and by the jaw when closing, and provisions for limiting the swing of said lever.

4. A car-coupler comprising a head, a swinging coupling-jaw, and a swinging pawl for locking the jaw, in combination with a lever fulcrumed in said head, projecting into the paths of travel of said jaw and pawl, and constructed to be moved by the pawl when unlocking and by the jaw when closing, and abutting shoulders on said head and lever for limiting the swing of said lever.

5. A car-coupler comprising a head, a swinging coupling-jaw having a recessed locking-

arm, and a lock for locking the jaw, in combination with a lever mounted in said head, entering the recess in said locking-arm at one end and extending rearwardly of said lock at the other end, said lever constructed to be moved by said lock and to swing said jaw.

6. The combination of the draw-head A, the coupling-jaw B, the locking-pawl C, and the lever E, pivoted to the draw-head and cooperating with both said jaw B and said pawl C, substantially as set forth, whereby when said pawl is operated it swings said lever, which in turn throws said coupling-jaw to its open position.

7. In a car-coupler, the combination, with the head A, coupling-jaw B, and locking-pawl C, pivoted at *h*, of the lever E, pivoted at *j* and having arm *l*, extending back of the pawl, and arm *k*, extending back of the jaw, said lever constructed when the pawl is unlocked to move the jaw open and when the jaw is closed to move the pawl into engagement therewith.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

CHARLES A. POOLEY.

Witnesses:

C. S. BUNDY,

CARLETON E. SNELL.