(No Model.) 2 Sheets—Sheet 1.

C. A. GOULD.

CAR COUPLING.

No. 495,032. Patented Apr. 11, 1893.

Fig. 1.

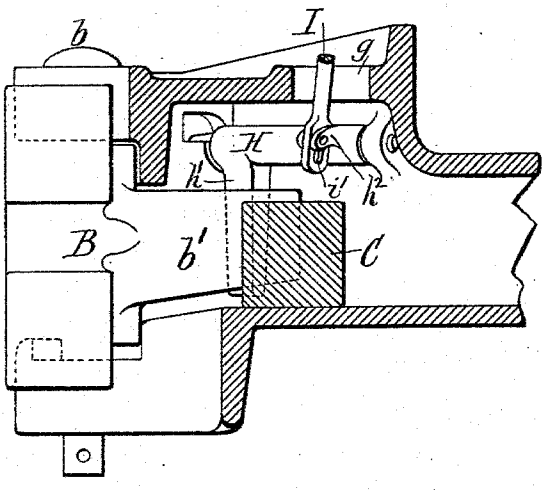


Fig. 2.

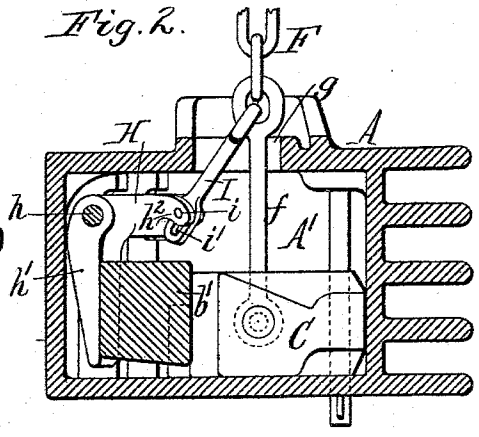


Fig. 3.

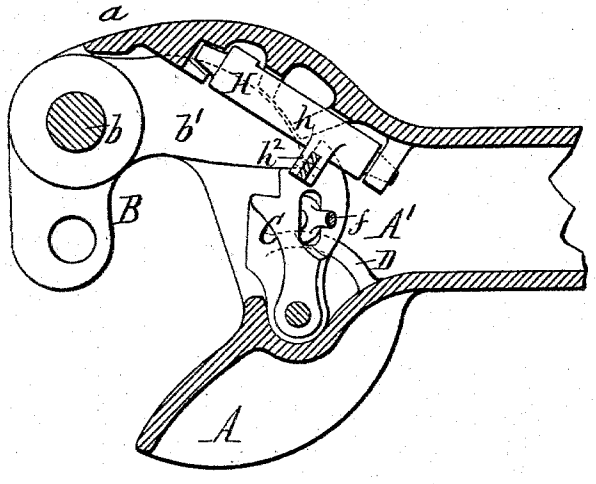
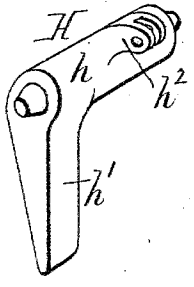


Fig. 4.



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(No Model.)

2 Sheets—Sheet 2.

C. A. GOULD.

CAR COUPLING.

No. 495,032. Patented Apr. 11, 1893.

Fig. 5.

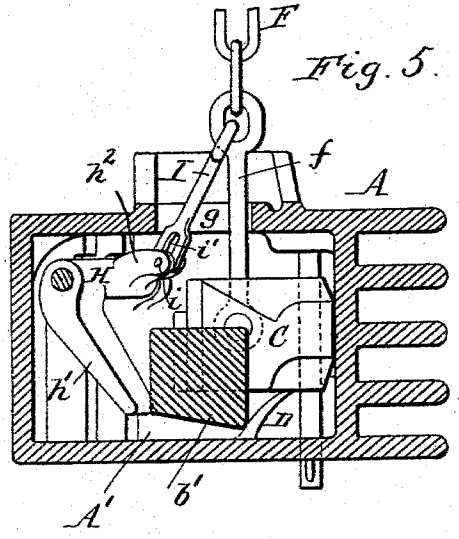


Fig. 6.

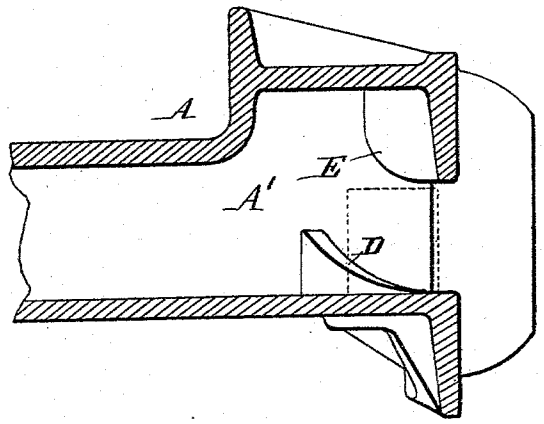
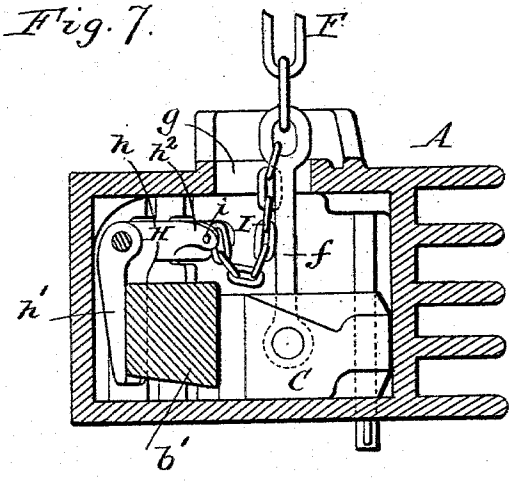


Fig. 7.



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UNITED STATES PATENT OFFICE.

CHARLES A. GOULD, OF BAY SIDE, NEW YORK.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 495,032, dated April 11, 1893.

Application filed February 6, 1893. Serial No. 461,175. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. GOULD, a citizen of the United States, residing at Bay Side, in the county of Queens and State of New York, have invented new and useful Improvements in Car-Couplings, of which the following is a specification.

My invention relates to twin-jaw car couplings in which the coupling jaw swings horizontally on the drawhead and which are provided with an automatic lock for retaining the jaw in its closed or coupled position and with a kicking device so-called for automatically throwing the jaw into its open position when released by the lock.

The object of this invention is the production of a kicking device of simple construction which shall operate with comparatively little friction and which is not operated by the lock.

In the accompanying drawings consisting of two sheets:—Figure 1 is a longitudinal sectional elevation of a car coupling containing my improvement, showing the coupling jaw locked. Fig. 2 is a cross section thereof, showing the jaw in the same position. Fig. 3 is a horizontal section of the coupling. Fig. 4 is a detached perspective view of the kicking device for opening the jaw. Fig. 5 is a vertical cross section of the coupling showing the jaw thrown to its open position. Fig. 6 is a vertical longitudinal section of the drawhead with the movable parts of the coupling removed. Fig. 7 is a view similar to Fig. 2, but showing a slack chain substituted for the slotted link by which the kicking lever is actuated.

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

A is the drawhead having the usual recess or chamber A′.

B is the coupling jaw or knuckle pivoted by an upright pin *b* to the forwardly projecting arm *a* of the drawhead.

b′ is the locking arm of the jaw.

C is the customary lock or pawl for retaining the coupling jaw in its closed position, which is preferably arranged to swing horizontally on the drawhead.

D is the forwardly-trending lower incline for automatically moving the lock forwardly into engagement with the arm of the coupling jaw when the jaw is swung into its closed position, and E is the usual rearwardly-trending upper incline for swinging the lock backward out of engagement with the coupling jaw, when the lock is raised.

F is the chain or other connection whereby the vertically movable lock is raised and which is connected with a hand lever arranged on the end of the car in the ordinary manner. The lifting chain may extend to the lock, but it is preferably connected therewith by an inflexible eye bolt *f* which projects through an opening *g* in the top of the drawhead, as shown in the drawings.

H is the kicking or shifting device for automatically opening the coupling jaw, after being unlocked. This shifting device consists of a horizontal rock shaft *h* arranged in the upper portion of the chambered drawhead on the same side as the coupling jaw, a depending shifting arm or finger *h′* extending downward from the rock-shaft and standing, when in its normal position, between the rear side of the locking arm of the coupling jaw and the adjacent inner wall of the drawhead, as most clearly shown in Fig. 2, and a short horizontal actuating arm h^2 projecting inwardly from the rear portion of the rock shaft and connected by a bolt or link I, with the chain or connection F for raising the lock of the coupling jaw. The actuating arm of the rock shaft is preferably bifurcated, as shown, and the lower portion of the connecting link I is arranged between the jaws of this bifurcated portion and attached thereto by a transverse pin or rivet *i* passing through said jaws and through a longitudinal slot *i′* formed in the link. The rock shaft is provided at its ends with trunnions which turn in suitable bearings in the drawhead. The rock arm does not project laterally into the path of movement of the lock, but is made so short that it clears the same, so that the arm is not affected by the movements of the lock and is operated solely by the lifting chain through the medium of the link I.

In the normal locked position of the coupling jaw, shown in Figs. 1, 2, and 3, the lock is engaged with the locking arm of the jaw, and the shifting finger of the kicking device stands behind said locking arm, while the actuating arm thereof is in a substantially hori-

zontal position. When it is desired to throw the coupling jaw to its open position, the lifting chain is raised by means of the usual hand lever which is not shown in the drawings. The first portion of this movement of the chain causes the lock to be raised against the upper incline E, which latter causes the lock to swing backward sufficiently to clear the locking arm of the coupling jaw. The continued upward movement of the chain is then transmitted to the actuating arm of the rock shaft by the link I, causing the latter to swing upward into the position shown in Fig. 5. This movement of the actuating arm causes the rock shaft to turn in the proper direction to swing the depending shifting finger forwardly, which latter, bearing against the locking arm of the coupling jaw, kicks the jaw to its open or uncoupled position. In order to prevent the shifting finger from being operated simultaneously with the lock, the link is formed with the slot *i'* which permits a dead movement of the link on the actuating arm of the shaft until the lock has cleared the arm of the coupling jaw, when the lower end of the slot comes in contact with the connecting pin *i*, and henceforth transmits the upward movement of the lifting chain to the rock shaft. This slack connection between the lifting chain and the kicking device may be established by a slack chain instead of the slotted link, which construction is represented in Fig. 7. By operating the arm of the rock shaft directly from the lifting chain, the shaft is actuated with a minimum amount of friction and the construction of the kicking device is simplified. When the jaw has been thrown to its open position and the locking pawl is dropped, the shifting finger returns by gravity to its former pendent position. When the jaw is swung inwardly to its locked position, its locking arm swings the lock backward on the lower incline and as soon as the locking arm has passed inwardly beyond the free end of the lock, the latter rides down its incline and automatically interlocks with the arm of the coupling jaw, in the ordinary manner.

I claim as my invention—

1. The combination with the drawhead, the coupling jaw, the lock, and the lifting chain connected with the lock, of a kicking device for opening the jaw, and a slack connection extending from the kicking device to the lifting chain, substantially as set forth.

2. The combination with the drawhead, the coupling jaw, the lock, and the lifting chain, of a kicking device for opening the jaw having a shifting finger for throwing the jaw to its open position, when unlocked, and an actuating rock arm which clears the lock, and a slack connection extending from said rock arm to the lifting chain, substantially as set forth.

3. The combination with the drawhead, the coupling jaw, the lock, and the lifting chain, of a kicking device for opening the jaw and a connecting link attached at one end to the lifting chain and having at its opposite end a sliding connection with the kicking device, substantially as set forth.

4. The combination with the drawhead, the coupling jaw, the lock, and the lifting chain, of a rock shaft journaled in the drawhead and having a depending shifting finger which engages against the locking arm of the coupling jaw and an actuating rock arm which clears the lock, and a connecting link attached at one end to the lifting chain and provided at its opposite end with a longitudinal slot, and a pin secured to said rock arm and passing through said slot, substantially as set forth.

Witness my hand this 4th day of February, 1893.

CHARLES A. GOULD.

Witnesses:
JNO. J. BONNER,
FRED. C. GEYER.