(No Model.)

F. L. BENJAMIN.

CAR COUPLING.

No. 451,018. Patented Apr. 28, 1891.

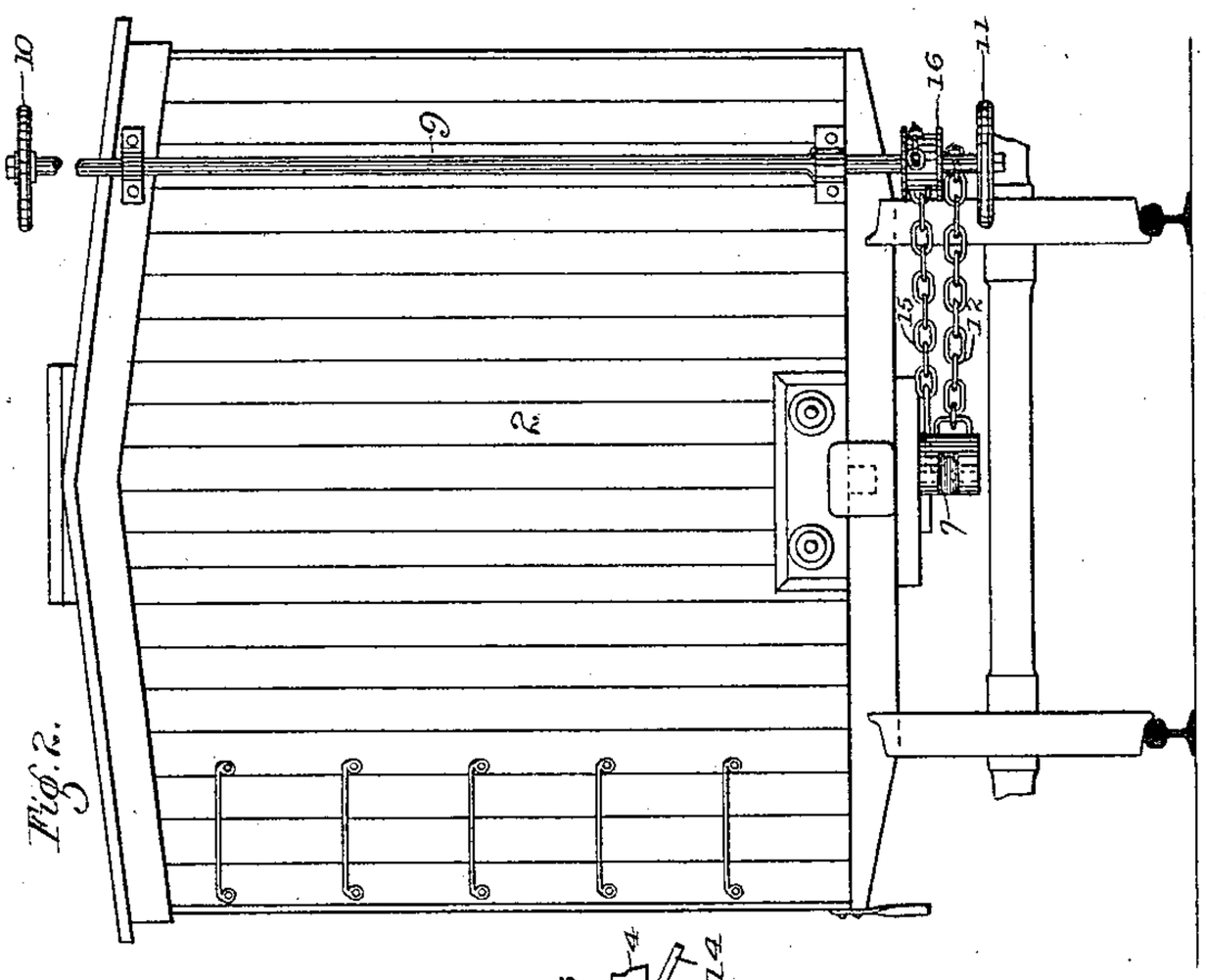

Fig. 2.

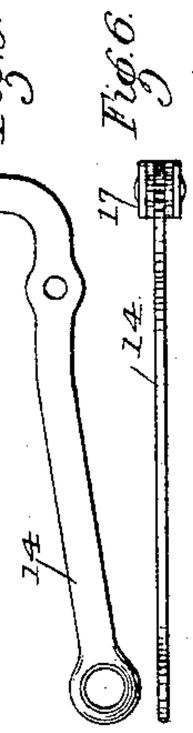

Fig. 5.

Fig. 6.

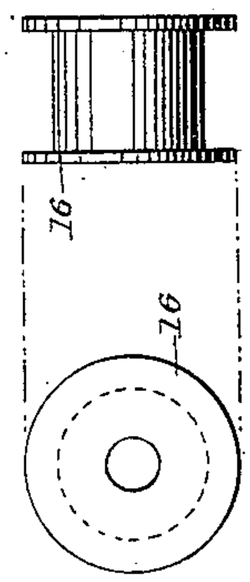

Fig. 8.

Fig. 7.

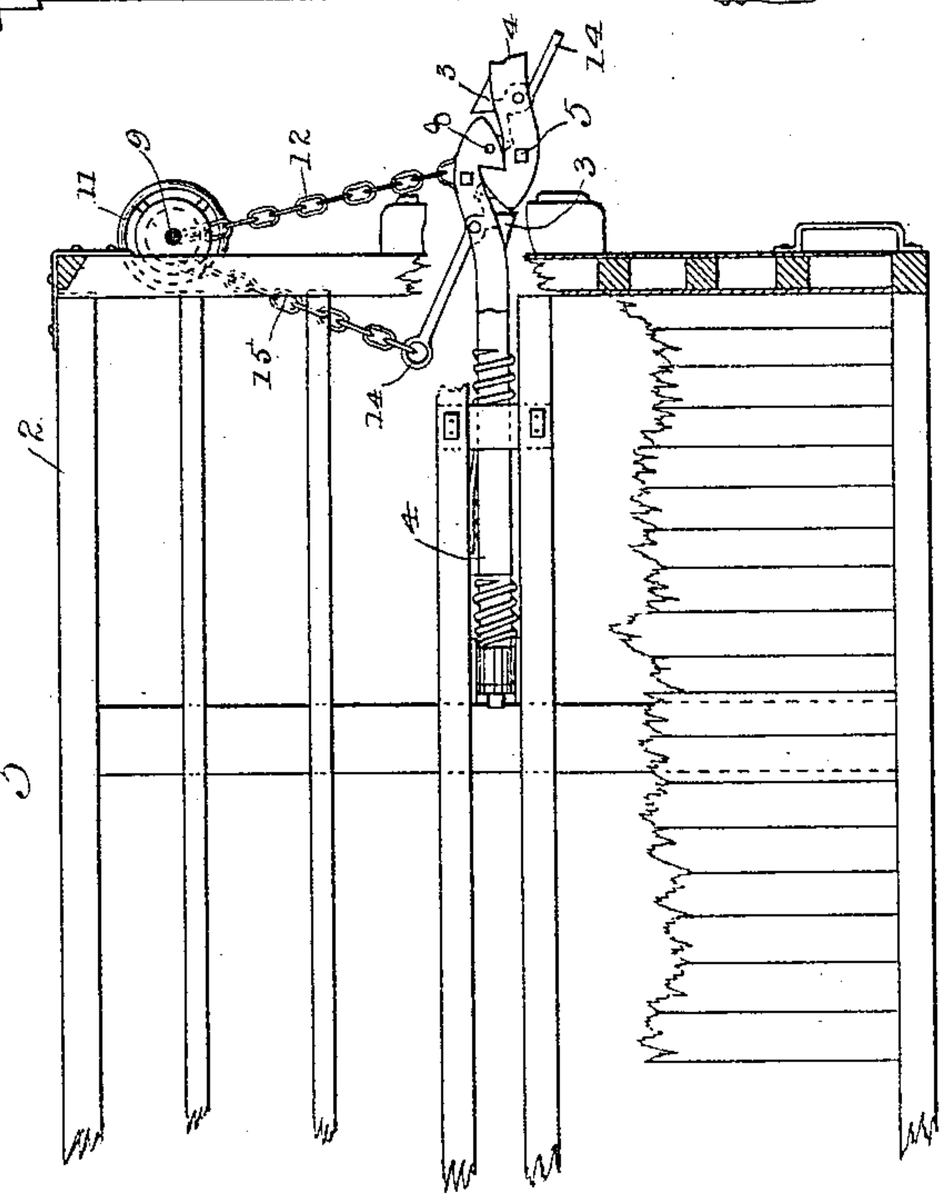

Fig. 1.

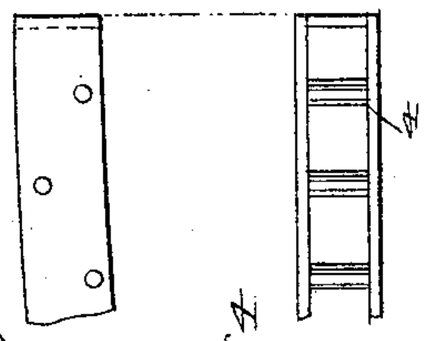

Fig. 3.

Fig. 4.

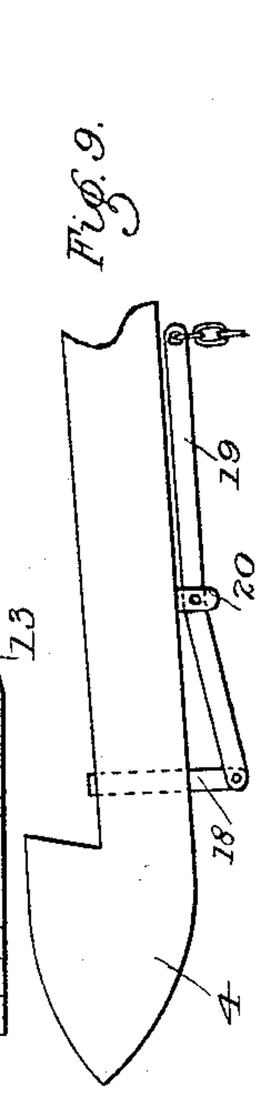

Fig. 9.

Witnesses:-
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UNITED STATES PATENT OFFICE.

FREDRICK L. BENJAMIN, OF ST. PAUL, MINNESOTA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 451,018, dated April 28, 1891.

Application filed August 23, 1890. Serial No. 362,841. (No model.)

To all whom it may concern:

Be it known that I, FREDRICK L. BENJAMIN, of St. Paul, Ramsey county, Minnesota, have invented certain Improvements in Car-Couplers, of which the following is a specification.

My invention relates to improvements in automatic car-couplers of the class of vertical plane, and particularly that type known as the "Miller coupler," its object being to provide improved means for readily uncoupling the device either from the top or side of the car; and it consists in arranging upon the end of the car a vertical rod or shaft, fitted with suitable hand-wheels and connecting the hook of the coupler therewith by means of a chain, so that by the turning of the shaft the chain is wound upon and draws the hook toward it, and also in arranging within the body of the hook a pivoted lever, the shorter arm of which may be turned to bear against the opposite hook by means of a chain connected to the long arm of the lever and running over a wheel or drum upon the said vertical shaft. By turning the shaft the coupler-hook is drawn back away from the other and the lever is turned on its pivot to simultaneously thrust the other hook in the opposite direction.

My invention further consists in the construction and combination hereinafter described, and particularly pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a plan view of my improved coupler, showing a portion of one of the connected cars, and Fig. 2 is an end elevation of a car fitted with my improved coupler. Figs. 3 and 4 are details of the coupler-hook; Figs. 5 and 6, details of the pivoted lever; Figs. 7 and 8, of the chain-drum; and Fig. 9 shows a modified form of lever.

In the drawings, 2 represents a freight-car to which the coupler is attached in the ordinary manner, and 4 is the coupler-hook, secured underneath the car-body in the ordinary manner, provided with the usual springs for controlling its position, and having the horizontal slot 7, with the vertical pin-hole 8 to receive a pin for securing a coupling-link when necessary. Upon the catch side of each of the hooks I prefer also to provide a shoulder or stop 3, against which the head of the opposite hook will strike in the act of coupling the cars. I also prefer to arrange on top of the hook a stop or shoulder 5, which will strike against the dead-wood upon the opposite car. Arranged vertically upon the end of the car adjacent the corner opposite from the catch 6 of the hook is a rod or shaft 9, mounted in suitable bearings, provided above and beneath the car with hand-wheels 10 and 11, by means of which the same may be readily turned by a person on the top or at the side of the car. Connecting the coupler-hook with this rod is the chain 12, which by the turning of the rod is wound upon it and draws the coupler-hook toward it. Arranged preferably in a horizontal slot 13 through the body of the hook and back of the catch is a pivoted lever 14, with its shorter arm or end adapted to bear against the catch of the opposite hook, and having a chain 15 attached at one end to the longer and rearwardly-extending arm of the lever, and connected at the other end to and passing around the wheel or drum 16, rigidly secured upon the shaft 9. By the proper adjustment of the relative length of the arms of the lever and the size of the drum or wheel 16 the turning of the shaft 9 exerts a substantially equal force upon each member of the coupler, drawing one toward the shaft and thrusting the other away from it, so that both hooks are moved laterally to disengage them from each other, whichever shaft 9 may be operated. The shorter arm of the lever 14 may be provided with a bearing block or arm 17 pivoted thereto, or equivalent attachment, and adapted to bear against the opposite catch and to turn on its pivot with the turning of the lever, thus diminishing friction between the parts.

Cars fitted with my improved coupler are automatically coupled in the ordinary manner. In uncoupling the same the shaft 9 of one of the cars is turned by means of the hand-wheel 10 and 11, thereby winding the chain 12 upon it or drawing its connected hook laterally toward the shaft. Simultaneously by the winding of the chain 15 upon the drum 16, the lever 14 is turned upon its pivot, its shorter arm striking against the opposite coupler-hook and forcing it back-

ward laterally until the hooks are disengaged from each other. By means of a pawl and ratchet or similar attachment the shaft may be held from turning and the coupler-hooks kept out of engagement with each other.

In attaching my improvement to old couplers I prefer to use the modified form of lever 19 shown in Fig. 9, having its bearing-block elongated into the plunger 18, arranged in a horizontal hole substantially at right angles to the coupler, in such position that it can be thrust against the catch of the opposite coupler and crowd it back. This lever 19 has a pivot-fulcrum 20 on the back of the coupler, and its long arm is connected to the drum 16 in the same manner as the lever 14. This lever 19 will thus serve to operate the plunger and move the coupler in the same manner as the lever 14.

I claim—

1. In a car-coupler, the combination, with a vertical-plane coupler-hook, of a vertical shaft arranged upon the car-body on the side opposite the catch of the hook, a chain connecting said hook with said shaft and adapted to be wound upon the shaft, a lever pivoted to said hook, having one arm adapted to engage and thrust back the opposite coupler-hook, and a chain connecting the other arm of the lever with said shaft, substantially as and for the purposes set forth.

2. In a car-coupler, the combination of a spring-controlled laterally-swinging hook member, a lever pivoted therein with one end adapted to engage the opposite hook member, and means for simultaneously swinging said hook against the tension of its spring and turning said lever upon its pivot to thrust the opposite hook member backward against the tension of its spring, substantially as and for the purposes set forth.

3. In a car-coupler, the combination of a spring-controlled laterally-swinging hook, a lever pivoted therein having one arm engaging the catch of the opposite hook, a vertical rotatable shaft upon the car-body upon the side opposite the catch of said hook, chains connecting said hook and said lever with said shaft and adapted to be wound upon said shaft, and means for rotating said shaft and separating the coupler-hooks, substantially as described.

4. In a car-coupler, the combination of the hook 4, the lever 14, pivoted in the slot 13, the rotatable vertical shaft 9, having hand-wheels 10 and 11, the chain 12, connecting said hook to said shaft, the drum 16, upon said shaft, and the chain 15, connected to and adapted to be wound upon said drum and connected to the long arm of the lever 14, substantially as and for the purposes set forth.

5. In a device of the class described, the combination, with the coupler-hook, of a horizontally-swinging lever pivoted thereto, and a bearing block or arm pivoted to the short arm of the lever and adapted to strike against the opposite hook, substantially as and for the purposes set forth.

6. In a device of the class described, the combination, with the coupler-hooks, of a horizontally-swinging lever pivoted to one, a pivoted bearing-block carried by its shorter arm, adapted to bear against the opposite coupler-catch, and means for turning said lever, substantially as and for the purposes set forth.

In testimony whereof I have hereunto set my hand this 18th day of August, 1890.

FREDRICK L. BENJAMIN.

In presence of—

T. D. NORWIN,

F. KIRKPATRICK.