No. 896,778. PATENTED AUG. 25, 1908.

J. TESSIER.

CAR COUPLING.

APPLICATION FILED JULY 3, 1907.

Fig. 1.

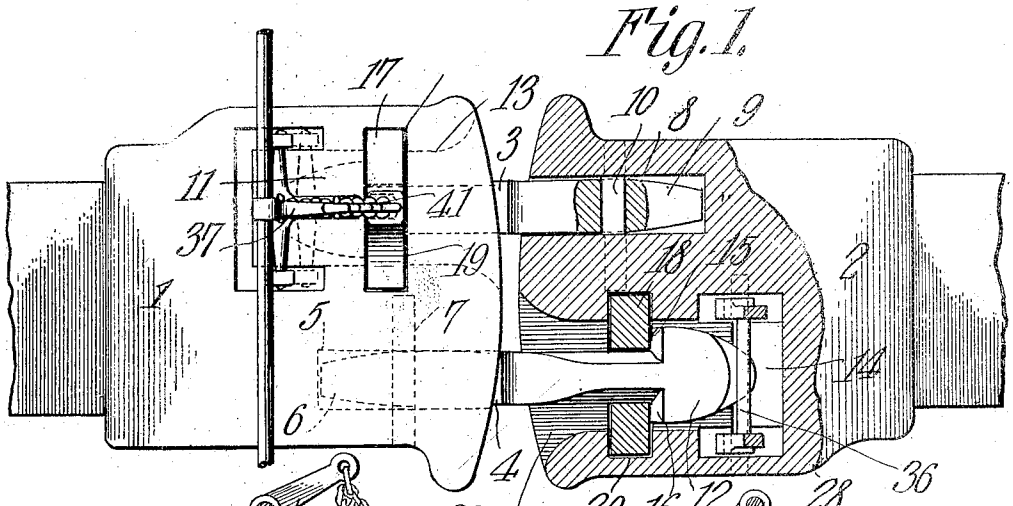


Fig. 2.

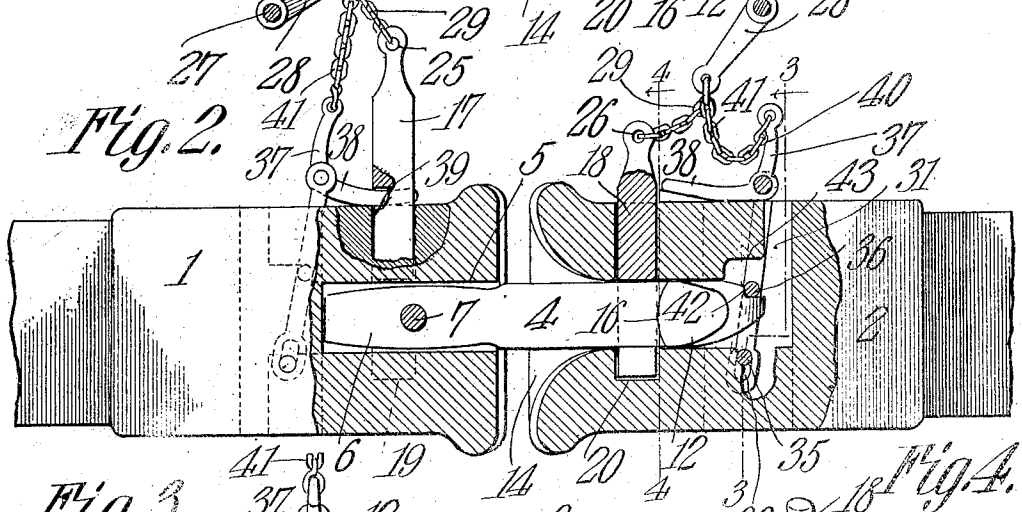


Fig. 3.

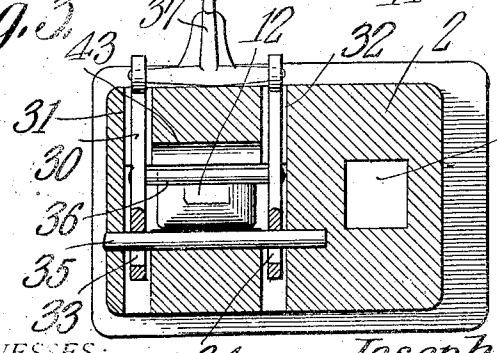
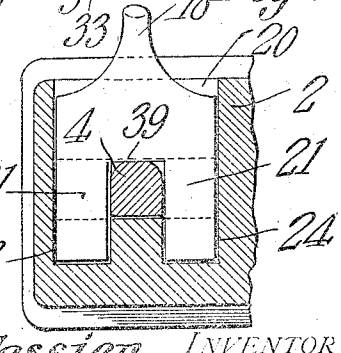


Fig. 4.



WITNESSES:

E. F. Stewart

A. M. Rose

Joseph Tessier, INVENTOR

By Church & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

JOSEPH TESSIER, OF ANTLER, NORTH DAKOTA.

CAR-COUPLING.

No. 896,773. Specification of Letters Patent. Patented Aug. 25, 1908.

Application filed July 3, 1907. Serial No. 382,124.

To all whom it may concern:

Be it known that I, JOSEPH TESSIER, a citizen of the United States, residing at Antler, in the county of Bottineau and State of North Dakota, have invented a new and useful Car-Coupling, of which the following is a specification.

This invention relates to improvements in car couplings of the automatic type, and it has for its object to provide an improved coupling of this character that will insure the safety of those persons employed in coupling and uncoupling the cars, and it is capable of use on heavy trains without liability of accidental uncoupling, the coupling bars and their coöperating locking members being so constructed and mounted in the respective draw-heads that they are amply strong to withstand the draw-bar pull of the heaviest trains, and the locking members are held in operative position and tripped at the proper moment automatically, so that it is unnecessary for the train men to enter between the cars prior to or during the coupling operation, improved devices being employed for operating the locking member to unlock the coupling bar and actuating the trip to retain the locking member in unlocked position or in readiness for the coupling operation.

To these and other ends, the invention comprises the various novel features of construction and combination and arrangement of parts, which will be hereinafter more fully described and pointed out particularly in the appended claims.

In the accompanying drawings, Figure 1 is a plan view of a car coupling constructed in accordance with the present invention, one of the draw heads being shown partly in section. Fig. 2 is a side elevation of the coupling, portions of the draw-heads being shown in section. Fig. 3 represents a transverse section of one of the draw-heads taken on the line 3—3 of Fig. 2. Fig. 4 represents a section of a portion of one of the draw-heads on the line 4—4 of Fig. 2.

Corresponding parts in the several figures are indicated throughout by similar characters of reference.

In the present embodiment of my invention, the coupling is provided with a pair of coupling bars, one of which is attached permanently to each draw-head and is adapted to coöperate with a locking member on the coöperating draw-head, such an arrangement insuring the proper relation of the coupling bars and their respective locking members at either end of the car, although it will be understood, of course, that a single coupling bar may be employed as a connection between the draw-heads. In the present instance, the draw-heads 1 and 2, which are suitably connected to the draw-bars on the respective cars, are connected by a pair of coupling bars 3 and 4, the coupling-bars in the forms shown being duplicates arranged in reversed relation when the draw-heads are coupled, the draw-head 1 having a recess 5 extending inwardly from its end to receive the attaching end 6 of the coupling bars 4, a pivot pin 7 extending horizontally through the walls of the recess and coöperating with the coupling bars to permit a limited vertical movement thereof that will enable the coupling to be made, although the draw-heads may stand at different heights. The draw-head 2 is provided with a similar recess 8 arranged out of alinement with the corresponding recess in the draw-head 1, and into the recess 8 is fitted the attaching end 9 of the coupling bars 3, a pivot pin 10 supported in the draw-head coöperating with the respective coupling bar and permitting it a limited vertical movement in the manner and for the purposes described in connection with the coupling bar 4. The outer ends of the coupling bars 3 and 4 are provided with locking heads 11 and 12 which are arranged to enter the openings 13 and 14 in the draw-head when brought together, the heads on the coupling bars being composed of enlargements, in the present instance, having their forward portions tapered or pointed in order to facilitate their entrance, and they have locking shoulders 15 and 16 with which the respective locking members coöperate.

A pair of locking members 17 and 18 are employed in the present instance, the locking members being arranged to operate vertically in correspondingly arranged slots 19 and 20 formed in the respective draw-heads, these slots being preferably of a width greater than that of the openings provided for the locking heads and coupling bars. The locking members employed in the present instance are bifurcated to form a pair of substantially parallel locking arms 21 and 22 which engage on opposite sides of the respective coupling bars at a point in rear of the locking shoulders 15 and 16, the arms operating vertically in the slot provided for them, and as the slot is wider than the opening into

which the coupling bar fits, a pair of vertical grooves are formed in the opposite vertical walls of the opening into which the arms of the locking member fit, and are thus reinforced. If so desired, a further reinforcement for the locking member may be provided by extending portions of the slot below the bottom of the adjacent opening to form a pair of seats 23 and 24 into which the lower ends of the arms on the locking member fit when the latter is in locked position.

The upper ends of the locking members are provided with eyes or other suitable devices 25 and 26 by means of which the unlocking mechanism may be attached, the unlocking or uncoupling mechanism shown in the present instance comprising a shaft 27 which is journaled on a suitable portion of the car, preferably in such a position that its outer end may be provided with an operating crank or handle which is accessible from one side of the car, so that it will be unnecessary for the operator to enter between the cars to couple and uncouple them, and any suitable connection may be employed between the shaft and the locking member, a crank 28 being provided on the shaft in the present instance, and it is connected to the locking member by a chain or other suitable connection 29, rotation of the shaft in one direction serving to elevate its respective locking member to uncouple the draw-head, and a reverse movement of the shaft permitting a movement of the locking member toward coupled position.

Any suitable means may be employed for lifting and retaining the locking members in uncoupled position in order that the locking heads on the respective coupling bars may enter the coöperating draw-heads when the latter are brought together, the device, as shown in the present embodiment of my invention, being so constructed and arranged that it will be operated by the same parts which operate the locking member, and it serves to retain the latter in unlocked position, and it operates automatically to release the locking member when the draw-heads are brought together. The device shown in the present instance for accomplishing this purpose comprises a trip which is composed of an actuating member 30 mounted to operate in slots 31 and 32 in the draw-head, and it has a pair of vertical slots 33 and 34 arranged to receive a pin 35 which extends horizontally within the draw-head. The actuating member is provided with a cross bar or other form of abutment 36 adapted to be operated by the coupling bar of the coöperating draw-head as the coupling bar moves into coupled position. The trip for retaining the locking member in unlocked position and for releasing it at the proper moment is operatively connected to the actuating member, the trip comprising, in the present instance, a bell crank lever 37 which is pivotally connected at an intermediate point to the upper end of the actuating member, one arm, 38, of the bell crank being arranged to coöperate with the upper surface of the draw-head as a fulcrum to elevate the actuating member, and also serving as a detent adapted to coöperate with the shoulder 39 formed between the arms of the locking member. The other arm of the bell crank, 40, is operatively connected by a chain or other flexible connection 41 to the pipe 28, so that when the latter is turned in a direction that will unlock the locking member, the bell crank will simultaneously rock on the arm 38 thereof as a fulcrum, first lifting the actuating member so as to disengage the abutment 36 thereon from the coöperating coupling bar, and, as the locking member reaches unlocked position, the arm 38 will move into engagement with the shoulder 39 of the locking member, as shown at the left hand side of Fig. 2. When the locking members of both draw-heads are elevated, the draw-heads may be uncoupled, the locking members being retained in unlocked position by the arm 38 of the bell crank operating as a detent, and, when the locking head of a coupling bar on another draw-head strikes the abutment 36, it will move the actuating member rearwardly until the bell-crank lever is disengaged from the locking member, the locking head on the coupling bar at this time being sufficiently inserted to permit the locking member to fall into coupled position. In the present instance, the forward end of each coupling bar is preferably recessed to form a shoulder 42 to engage the abutment 36 of the actuating member, and the adjacent wall of the coupling bar receiving opening in the draw-head is cut-away, as at 43, to receive the abutment and permit it to clear the shoulder on the coupling bar when the actuating member is lifted, and as the abutment clears the said shoulder, the actuating member may turn about the pin 35 and permit the arm 38 of the bell crank to engage the shoulder 39 on the locking member.

Railway cars equipped with couplings constructed in accordance with the present invention are capable of being coupled and uncoupled with the greatest facility, and without the necessity of the trainman or operator entering between the cars to make the coupling or to set the parts, the parts being automatically set, in the present instance, by the previous uncoupling operation, and the construction of the coupling is such that it is capable of use on the heaviest trains without liability of accidental uncoupling or breakage.

What is claimed is:—

1. In a car coupling the combination with a draw head having a coupling bar receiving opening and a coupling bar disposed to en-

ter the opening; of an actuating member movably mounted within and extending beyond the draw head, a detent pivotally connected to the projecting portion of said member, a locking member disposed to cooperate with the coupling bar, and lifting means connected to the detent and locking member for simultaneously raising said locking member and shifting the detent into engagement therewith.

2. In a car coupling the combination with a draw head having a coupling bar receiving opening, and a coupling bar disposed to enter the opening; of a locking member movably mounted within the draw head and disposed to engage the coupling bar, a pivoted detent for engaging the locking member to hold it in unlocked position, an actuating member pivotally mounted within and extending beyond the draw head and constituting a support for the detent, said member being capable of longitudinal movement, and a cross bar carried by the actuating member and in the path of the coupling bar and disposed to be actuated by said coupling bar to withdraw the detent from engagement with the locking member.

3. In a car coupling, the combination with a draw-head having a coupling bar receiving opening therein, and a coupling bar adapted to coöperate therewith, of a vertically movable locking member, an actuating member mounted for pivotal and reciprocatory movements and having a part arranged to be engaged by the coupling bar as the latter moves into coupled position, a bell crank pivotally connected to the free end of the actuating member and having an arm arranged to coöperate with the locking member to retain the latter in inoperative position by a pivotal movement of the actuating member, and serving to reciprocate the latter to disengage the latter from the coupling bar.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JOSEPH TESSIER.

Witnesses:

J. H. Cook,

D. W. Patterson.