

C. H. TOMLINSON.

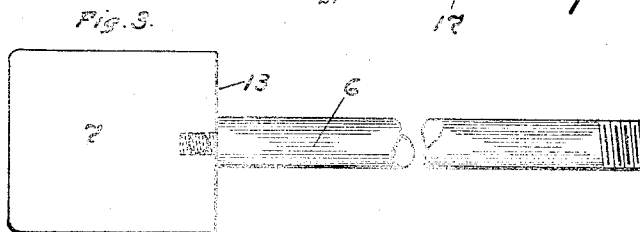
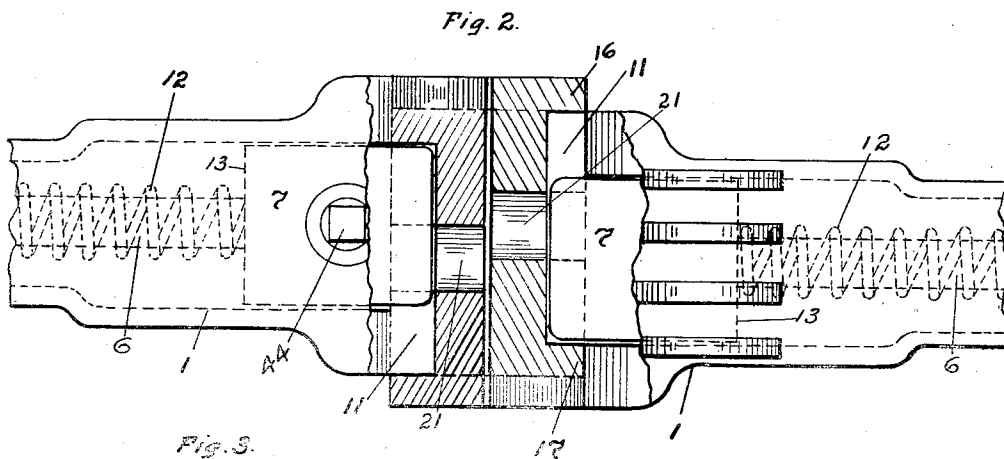
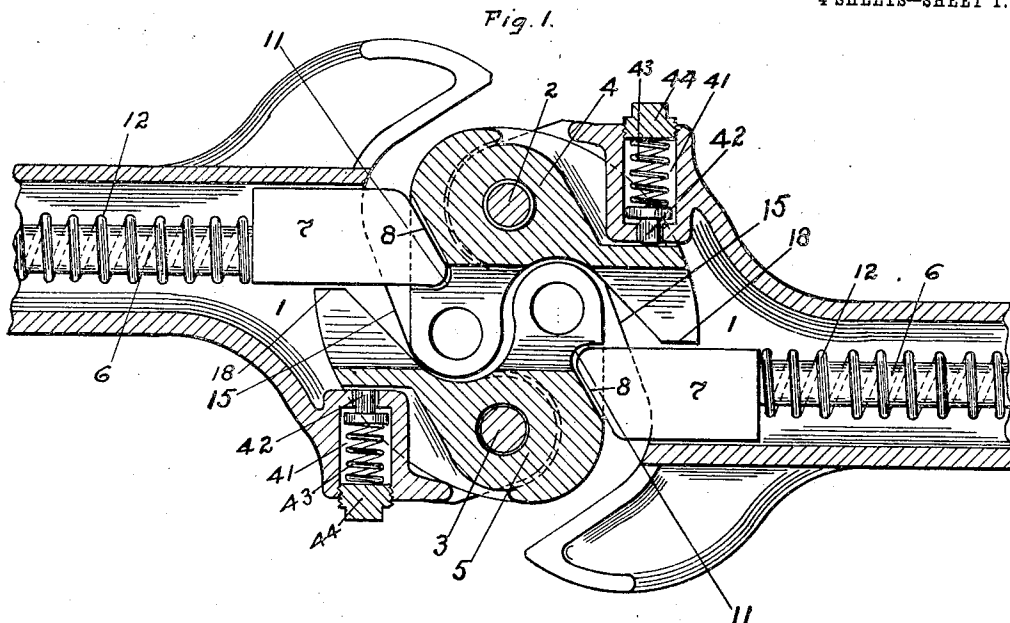
CAR COUPLING.

APPLICATION FILED MAY 4, 1908.

Patented Nov. 30, 1909.

4 SHEETS—SHEET 1.

941,965.



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CAR COUPLING.

APPLICATION FILED MAY 4, 1908.

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Fig. 5 4 SHEETS—SHEET 2.

941,965.

Fig. 4.

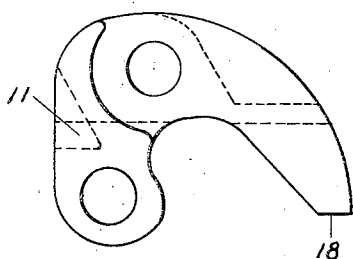


Fig. 6.

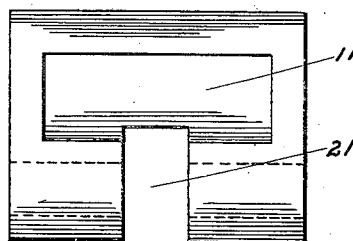


Fig. 7.

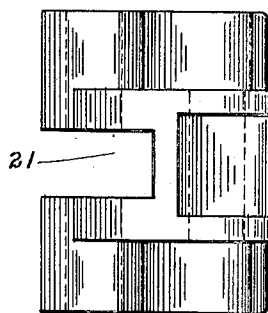
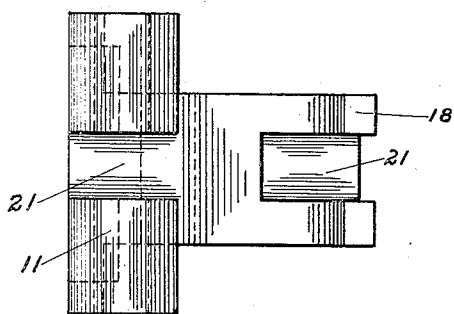
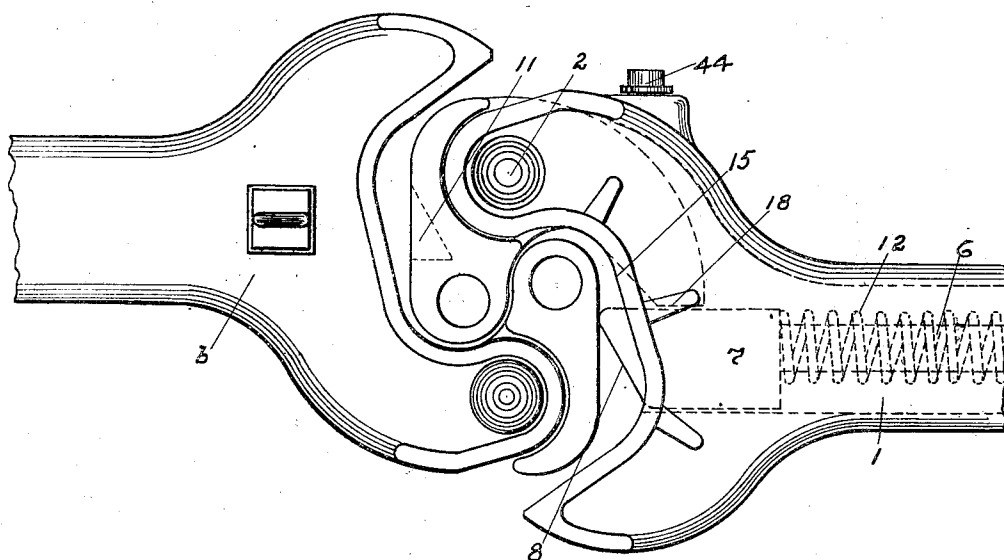


Fig. 8.



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Witnesses
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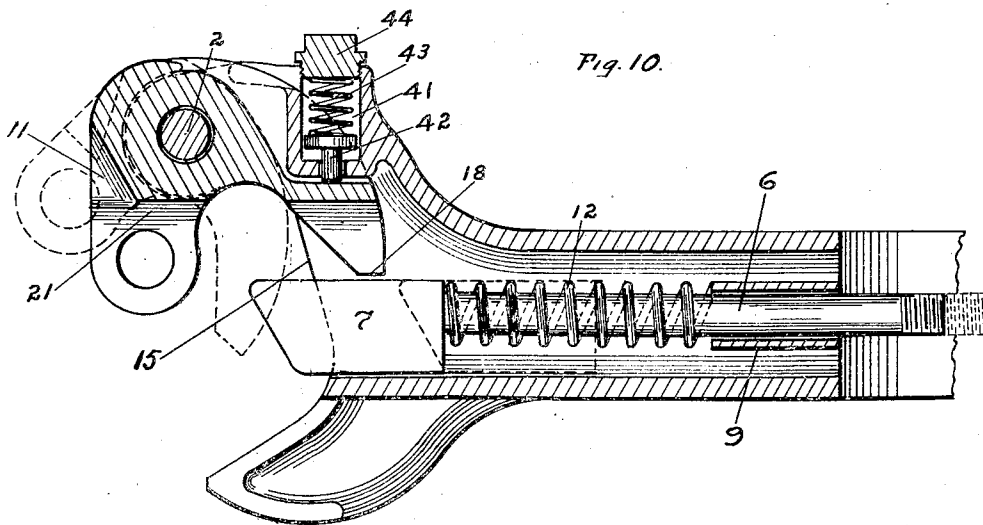
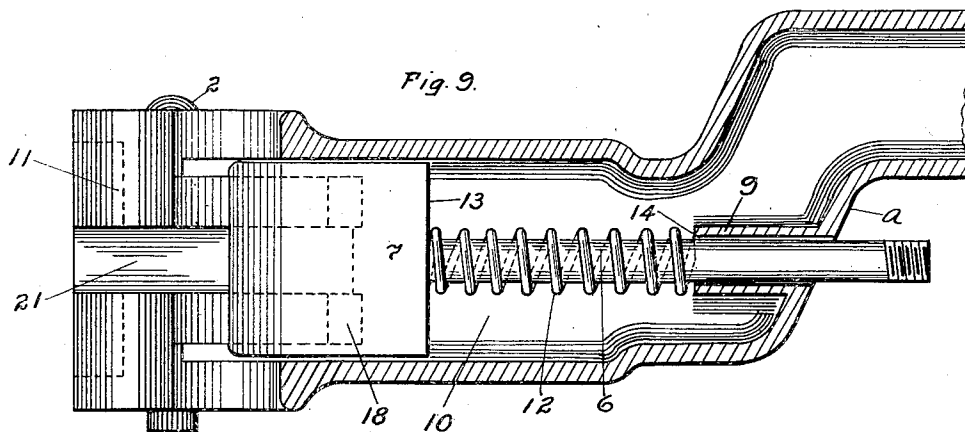
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CAR COUPLING.
APPLICATION FILED MAY 4, 1908.

941,965.

Patented Nov. 30, 1909.
4 SHEETS—SHEET 3.



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941,965.

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4 SHEETS—SHEET 4.

Fig. 11.

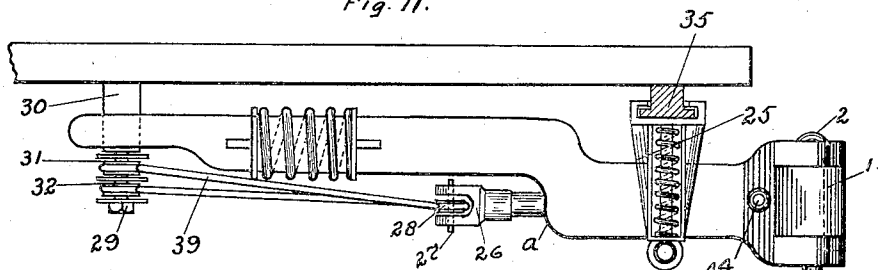
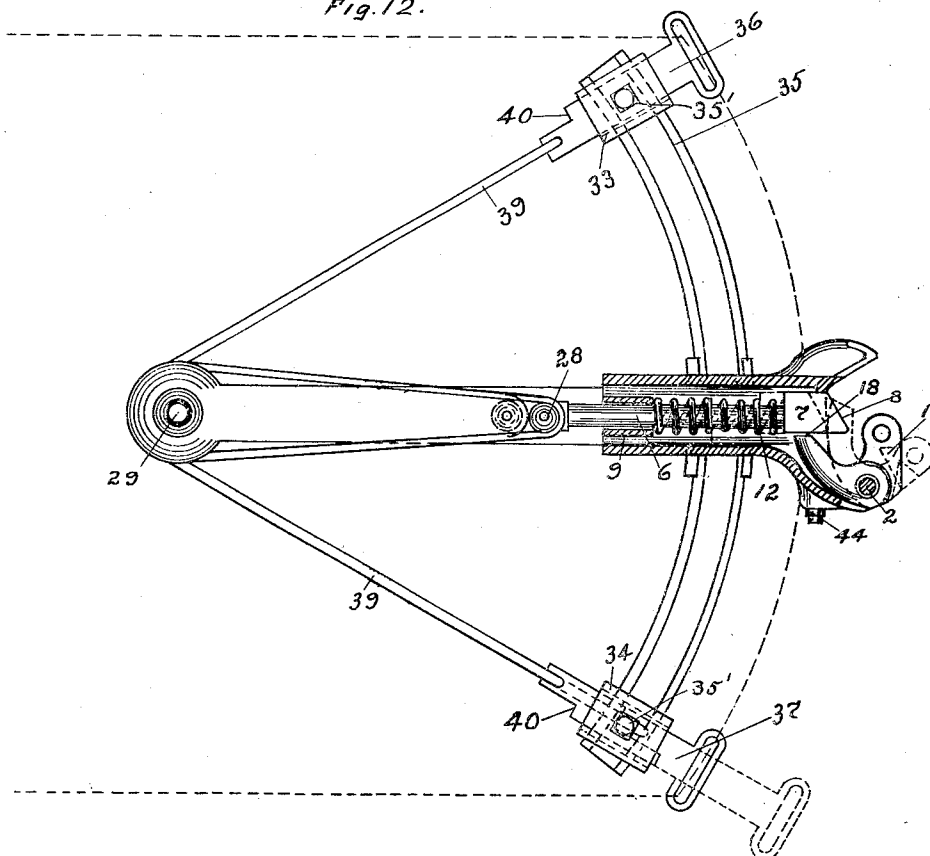


Fig. 12.



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UNITED STATES PATENT OFFICE.

CHARLES H. TOMLINSON, OF MANSFIELD, OHIO.

CAR-COUPLING.

941,965.

Specification of Letters Patent.

Patented Nov. 30, 1909.

Application filed May 4, 1908. Serial No. 430,647.

To all whom it may concern:

Be it known that I, CHARLES H. TOMLINSON, a citizen of the United States of America, and a resident of Mansfield, Richland county, Ohio, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification.

My invention relates to improvements in car-couplers of the "Janney" type. In the use and operation of couplers of the "Janney" type, the coupling devices at times uncouple because of the excessive vertical movement of the coupling devices due to the conditions under which they must operate when in use. In the operation of the Janney type of couplers on roads, where there are short radius curves to turn, the Janney type will buckle when attached to a radial or swinging draw-bar when in the pushing position.

One of the objects of my invention is to allow for a limited vertical movement and to keep the couplers from buckling when pushing a car around short curves.

A further object of my invention is to provide a car-coupler of the type described above with means of permitting excessive vertical movement and at the same time prevent the couplers from uncoupling.

A further object of my improvement is to provide a coupler that will automatically couple with a foreign coupler of the "Janney" type that is not equipped with my improvement.

A further object of my improvement is to provide an efficient locking bar for locking the knuckle in coupled position with means provided thereon to unlock the coupling devices when desired.

I attain these and other objects by the mechanism illustrated in the accompanying drawing, in which:

Figure 1 is a horizontal sectional plan view of two couplers showing them coupled together with the inclined end of the locking bars engaged with similar shaped recesses formed in the knuckles. Fig. 2 is a side elevation partly in section of two couplers coupled together showing the knuckles out of vertical alinement with each other and means of preventing them from uncoupling. Fig. 3 is a detail view of the locking bar. Fig. 4 is a top elevation of one of the knuckles showing the form of the recess. Fig. 5 is a front end elevation of Fig. 4 showing the slot and recess formed

therein. Fig. 6 is a side view of Fig. 4. Fig. 7 is a rear end elevation of Fig. 4. Fig. 8 is a plan view of a "Janney" type coupler coupled to a coupler equipped with my improvement showing the end of the locking bar contacting with the ordinary knuckle. Fig. 9 is a sectional side elevation of one of the couplers. Fig. 10 is a horizontal sectional plan view of one of the couplers showing the knuckle in coupled position in full lines and the knuckle in uncoupled position in dotted lines, also the position of the locking bar in uncoupled and coupled positions. Fig. 11 is a side elevation of a radial draft-rigging showing the draw-bar and coupling device connected thereto and supported by a spring-draw-bar carrier which permits additional vertical movement of the couplers if necessary, also a side view of the sheave-pulley and cable connected to the locking bar that is used for uncoupling purposes. Fig. 12 is a plan view partly in section of the uncoupling means, draw-bar coupling device, locking bar, the spring draw-bar carrier and radial support.

In the drawings, 1 represents a hollow draw-bar of the ordinary "Janney" type and 2 and 3 represent pins upon which the knuckles 4 and 5 are pivoted. A sliding locking bar 6 is provided in each draw-bar having an enlarged portion 7 with an inclined extremity 8 secured thereto. One end of the locking bar 6 extends beyond the rear extremity of the elbow (a) of the draw-bar and is operated through the medium of an uncoupling means which will be described hereinafter. An inwardly projecting tubular portion 9 is preferably made integral with the draw-bar. One end of the locking bar 6 is movably mounted in and supported by the tubular portion 9. (See Figs. 9 and 10.) The enlarged portion 7 of the locking-bar is made of such a dimension or size as to fit the chamber 10 of the draw-bar keeping the sliding locking bar in perfect alinement with the recess 11 formed in the opposite knuckle when movement is imparted to it.

A coil-spring 12 is interposed between the shoulder 13 formed by the enlarged portion 7 of the locking-bar and face 14 of the tubular portion 9 of the draw-bar and exerts a pressure against the enlarged portion 7 forcing it out toward the contour or the face of the draw-bar.

The recess 11 of the knuckle is formed of such shape as will substantially fit the in-

clined portion or face 8 of the enlarged portion 7 of the locking-bar. The recess is made wider than the enlarged portion of the locking-bar to permit vertical movement of the opposed knuckle. (See Fig. 2.)

The walls 16 and 17 prevent extreme vertical movement in a downward or upward direction by contact with the end of the locking-bar thereby preventing the knuckle from uncoupling due to excessive vertical movement.

When it is desired to couple the cars, the sliding locking-bar is forced against the spring 12 compressing the spring until the end 8 of the locking-bar is in the position shown by the dotted line in Fig. 10 which permits the knuckle to swing to its locking position as shown in Fig. 1 and the locking-bar is then released and moves forward under the tension of the spring 12 and passes by the tail 18 of the knuckle, securely locking the knuckle in coupled position as shown in Fig. 1. The inclined end 8 of the enlarged portion 7 extends beyond the contour or face 15 of the draw-bar and engages with the recess 11 of the opposed knuckle as shown by Figs. 1 and 2.

It will be noted that when the inclined portion 8 of the locking-bar is engaged with the recess 11 of the opposed knuckle that the vertical movement of the couplers are limited to the space between the enlarged portion 7 of the sliding-bar and the walls 16 and 17 of the recess. The same operation is true of the opposing coupler thereby effectually preventing the couplers from uncoupling because of excessive vertical movement.

It will be observed by reference to Fig. 1 of the drawings that the locking bars prevent buckling when the cars are coupled and rounding a curve. The flat sides of the enlarged portions 7 contact with the flat sides of the recesses 11 and as the cars are making the curve, hold the draw-bars in alinement with each other and prevent them from bending or buckling in the center. This is quite important and of great advantage and utility because the bending or buckling of the draw-bars when rounding a curve is common in practice and where means are provided to permit the draw-bars to pivot on the connecting pins and yet remain coupled and in alinement with each other, greater efficiency is obtained in the operation of the couplers because the car that pushes the other around the curve applies the power in a median line or direct line notwithstanding the fact that the couplers do not aline with the bodies or trucks of the cars.

Attention is called to the fact that the locking-bar is movably held in position through the medium of the coil-spring 12 and that when it is desired to couple with a "Janney" type coupler, that is not equipped

with a knuckle having a recess formed therein to receive the end of the locking-bar, the locking-bar is forced rearwardly and remains in that position until the couplers are released from each other when it is automatically returned to its normal position preparatory to coupling up with an opposed coupler equipped with my improvement. It will be observed that this is done automatically and does not require any attention upon the part of the operator. If, for any reason, it is desired to couple to a foreign coupler that is not of the "Janney" type, I provide a link-bar 19. One end is provided with a reduced or shouldered portion 20 which is inserted in the slot 21 leaving the opposite end projecting outward beyond the forward extremity of the draw-bar and coupling devices.

The shouldered or reduced portion 22 of the link-bar contacts with the inner face of the enlarged portion 7 of the locking-bar and prevents it from pivoting on the pin 23 or allowing any lateral movement of the link-bar. The projecting end 24 is adapted to be connected to an opposed coupler of a foreign type.

In the application of my improvement to the ordinary standard "Janney" type coupler and in the means provided for permitting excessive lateral movement and at the same time preventing the uncoupling of the couplers, I have used in conjunction therewith my spring-bar draw-bar carriers 25 which forms part of an application for a patent filed January 26, 1907, Serial No. 354,352. When the spring draw-bar carrier 25 is used in conjunction with my couplers, any further vertical movement that it is necessary for the couplers to have and at the same time to remain coupled is provided for by the spring draw-bar carrier which yieldingly supports the draw-bars. Attention is called to the fact that provision is made for excessive vertical movement of the coupling devices and at the same time prevent the coupling devices from uncoupling from each other.

In order to provide a means of uncoupling the coupling devices or knuckles as referred to heretofore, I secure, to the projecting end of the locking-bar 6 a bifurcated jaw 26 which is adapted to receive a pin 27 upon which is journaled the sheave-pulley 28. A pin 29 is secured to the drafting support 30 and two sheave pulleys 31 and 32 are mounted thereon. Brackets 33 and 34 are secured to the curved supporting bar 35 of the draw-bar carrier by the bolts 35' and support the sliding bars 36 and 37.

One end of a cable 39 is connected to the sliding bar 36 and the free end passes over the sheave-pulley 31; thence over the sheave-pulley 28; thence over the sheave-pulley 32

and is then connected to the sliding bar 37. The cable, as will be observed, is connected to the locking-bar of the coupling device and when movement is imparted to the sliding bar 36 or 37 the locking-bar is slidably operated to perform the function described hereinbefore.

The movement of the sliding bars is illustrated by the full and dotted lines of the sliding bar 37, the full lines showing the position of the locking-bar when engaging the recess of the opposed knuckle and the dotted line showing its position when withdrawn from the recess. (See Fig. 15.)

The sliding bars 36 and 37 are provided with shouldered portions 40 which are adapted to contact with the brackets 33 and 34 to maintain the couplers in uncoupled position when desired.

When two cars are coupled together through the medium of my improved couplers, and it is desired to uncouple the cars, movement is imparted to one of the screw-threaded sliding bars that is connected to the locking-bar of one of the draw-heads through the medium of a cable and the inclined end 8 of the locking-bar is withdrawn from the recess of the opposed knuckle; the operator then grasps the handle of one of the sliding bars that is secured to the other car and which is connected to the locking-bar in the same manner as described hereinbefore and pulls it backward against the tension of the spring 12 thereby compressing the spring until the inclined end 8 of the locking-bar is forced back far enough to clear the tail-piece 18 of the knuckle, thereby permitting it to uncouple from the opposed knuckle.

In order to cause the knuckles of each coupling device to automatically return to uncoupled position, I provide a tubular casing 41 into which a shouldered pin 42 is inserted leaving one end projecting into the draw-bar. A coil-spring 43 is inserted in the casing with one end contacting with the pin 42 and is held in place by the plug 44 which compresses the coil-spring 43 and thereby constantly exerts a pressure against the pin 42 to keep the reduced end projecting into the hollow portion of the draw-bar and contacting with the tail-piece of the knuckle so that when the knuckles are released from each other by the uncoupling means, they will be started to their proper position for coupling purposes.

Applicant is aware that the prior art

shows means of locking the knuckles of "Janney type" couplers by means of gravity and spring held locks, hence he does not claim broadly the means of locking the knuckles. Applicant's invention consists in combining simple and efficient means to lock the knuckles, permit excessive vertical movement of the couplers when the cars are on different grades and to prevent buckling when rounding a curve.

Having fully described my invention, what I claim and desire to secure by Letters Patent is:

1. In a car coupler of the "Janney" type comprising a hollow draw-head, a knuckle having an elongated recess formed in the outer face thereof pivotally secured to the draw-head, a spring-held locking bar slidably mounted in the draw-head with one end normally extending beyond the face thereof, and an uncoupling device for retracting the locking-bar against the pressure of the spring.

2. The combination of two car-couplers of the "Janney" type comprising two hollow draw-heads having sliding spring-held locking bars mounted therein with their ends projecting beyond the chamber of the draw-heads, knuckles pivotally secured to said draw-heads having elongated recesses and so located as to be in direct alinement with the extremities of the locking-bars to permit the locking-bars to enter the recesses of the opposing or coöperating knuckles respectively when the knuckles are in coupled position and to permit some vertical movement but limit excessive vertical movement of the couplers, and an uncoupling device for retracting the locking-bar against the pressure of the spring.

3. In a car-coupler of the "Janney" type, the combination of a recessed knuckle and a longitudinally sliding springheld locking device projecting beyond the forward contour line of the coupler which is adapted to enter the recess of an opposed knuckle to prevent excessive vertical displacement and buckling effect when coupled to another of its own type, and an uncoupling device for retracting the locking-bar against the pressure of the spring.

Signed at Mansfield, Ohio this 29 day of April 1908.

CHARLES H. TOMLINSON.

Witnesses:

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PEARL ACHERMAN.