No. 702,239. Patented June 10, 1902.

J. C. NELSON.

CAR COUPLING.

(Application filed Jan. 4, 1902.)

(No Model.)

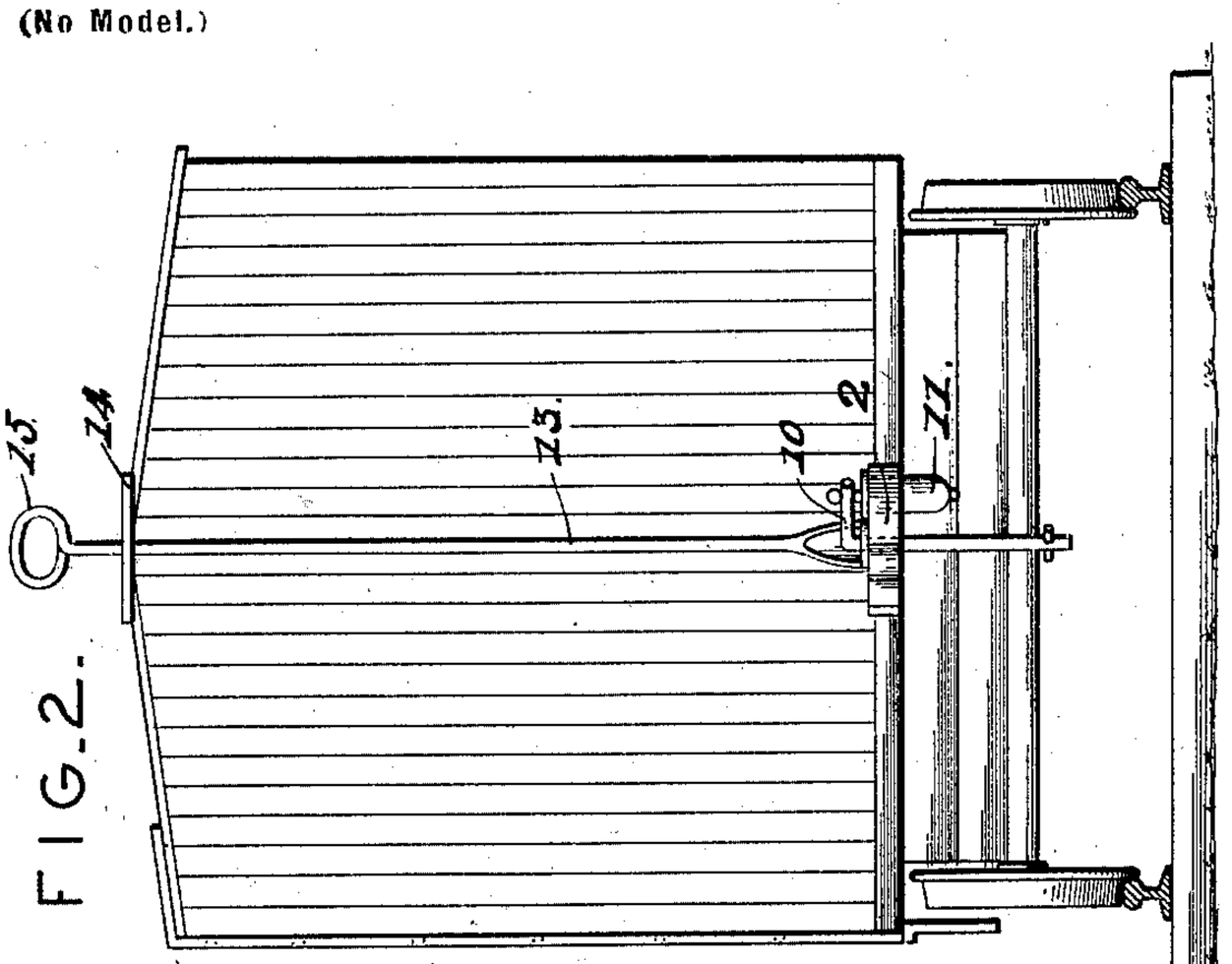

FIG. 2.

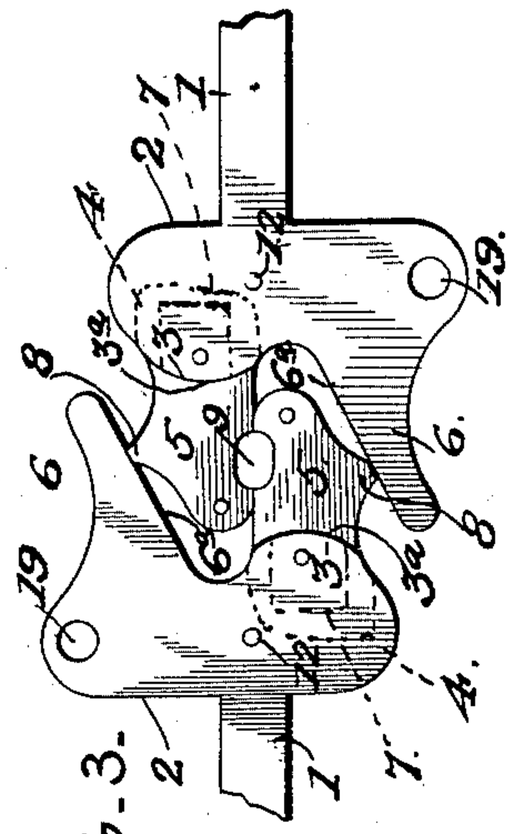

FIG. 3.

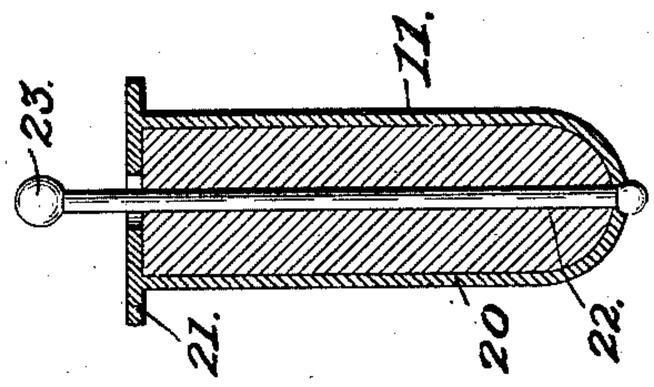

FIG. 5.

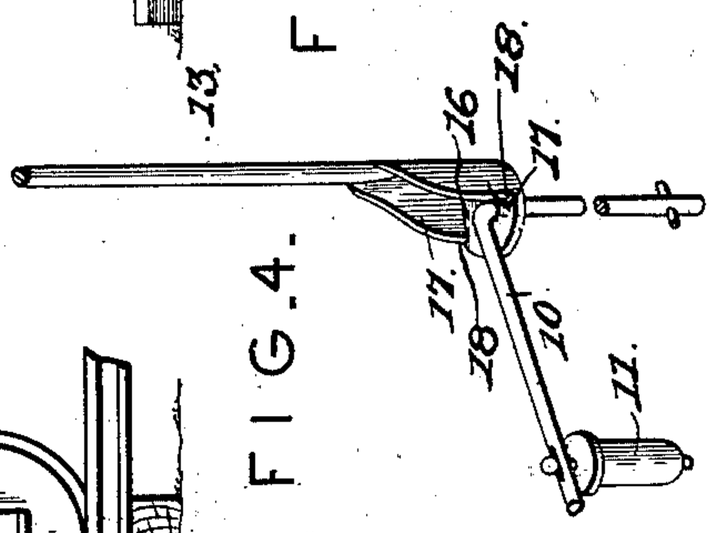

FIG. 4.

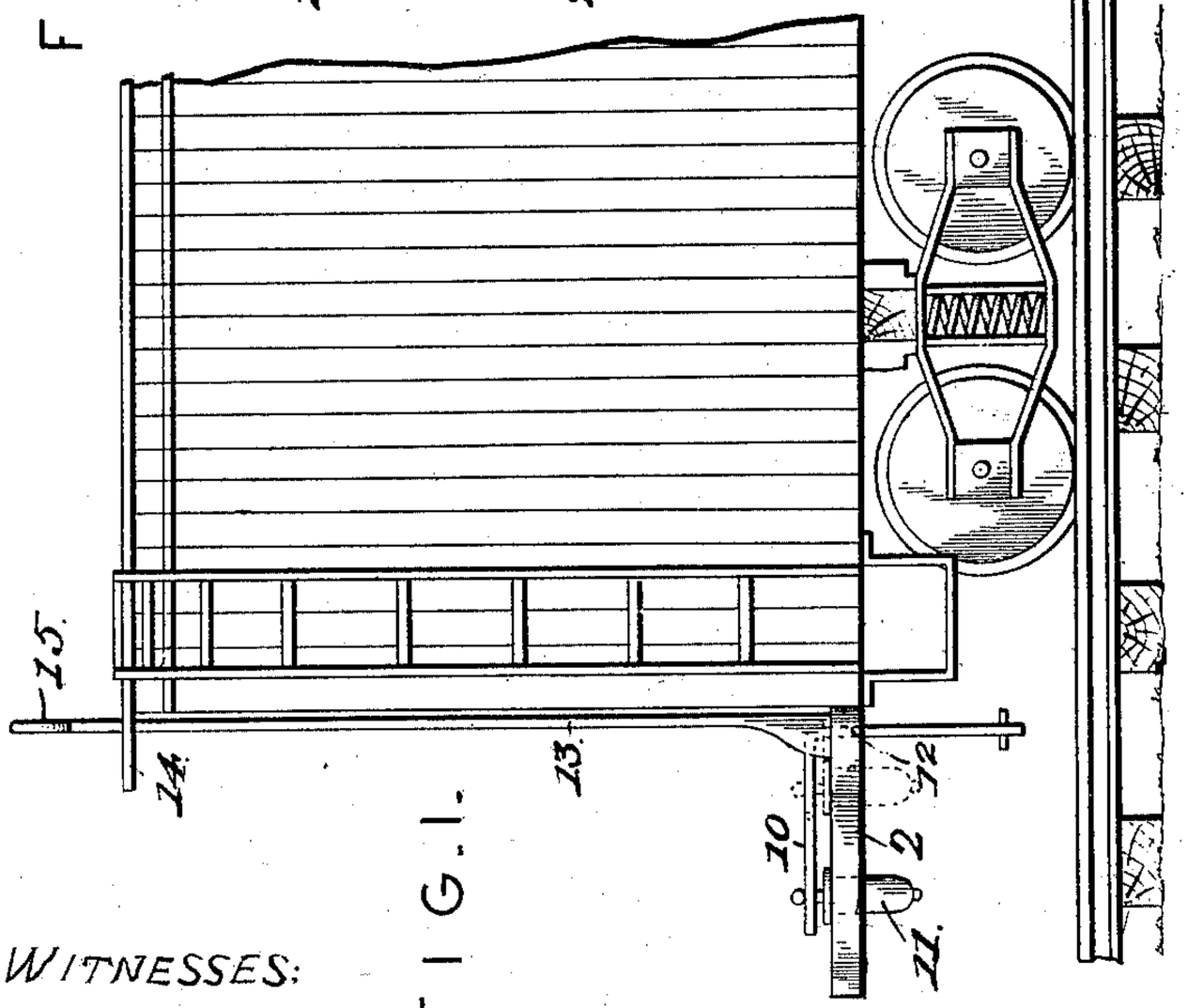

FIG. 1.

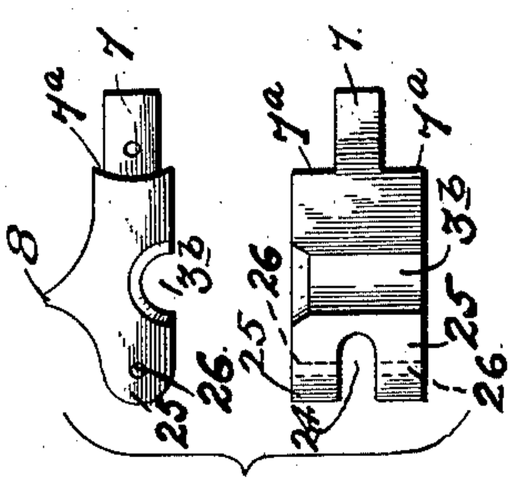

FIG. 6.

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JOHN COLUMBUS NELSON, OF DAYTON, TENNESSEE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 702,239, dated June 10, 1902.

Application filed January 4, 1902. Serial No. 88,445. (No model.)

To all whom it may concern:

Be it known that I, JOHN COLUMBUS NELSON, a citizen of the United States, residing at Dayton, in the county of Rhea and State of Tennessee, have invented new and useful Improvements in Car-Couplers, of which the following is a specification.

This invention relates to car-couplings, and has for its object to produce a device of this character in which a multiplicity of coupling-pins is unnecessary to lock the couplings, thus reducing the number of parts constituting the couplings, whereby a coupling may be made cheaper, more durable and effective than those requiring more than one coupling.

A further object of the invention is to provide a shifting mechanism for the coupling of an improved construction, whereby the coupling-pin may be from the top of a car readily shifted to lock and unlock the couplings.

Further objects of the invention will appear as the nature of the same is fully understood from the following description and accompanying drawings.

The invention consists in the novel construction, combination, and arrangement of parts to be hereinafter fully described and claimed, and illustrated in the accompanying drawings, showing the preferred form of the invention, and in which—

Figure 1 is a side elevation of a car equipped with a coupling of my improved construction. Fig. 2 is a front elevation thereof. Fig. 3 is a top plan view of the couplings detached from the cars and illustrating the relative positions they assume to receive the coupling-pin to lock them. Fig. 4 is a perspective view of the shifting mechanism. Fig. 5 is a vertical sectional view of the coupling-pin. Fig. 6 is a top plan view and a side elevation of the pivoted jaw of the coupling involving a slight modification.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

Referring to the drawings by numerals of reference, 1 1 designate draw-bars of any approved construction to be secured to cars in the usual manner, and the forward ends thereof terminate in enlarged portions, forming draw-heads 2, having grooves providing shoulders 3, having convex faces 3^a and horizontal recesses 4, in which are secured, to have a limited horizontal movement, pivoted jaws 5, and said grooves also provide forwardly-extending fingers 6, having their extremities outwardly and their inner faces 6^a laterally inclined to direct the jaws in proper relation to each other to receive a coupling-pin to lock them in their coupled position.

The pivoted jaws 5 are provided with reduced portions or stems 7, forming concave shoulders 7^a to receive the convex faces 3^a of the shoulders 3 when the stems 7 are inserted in the recesses 4, where they are secured to pivotally connect the jaws to the draw-heads and permitting them to have a limited horizontal movement. The outer edges of the pivoted jaws are provided with laterally-projecting lugs 8 to contact with the inner faces of the fingers 6 to assist them in directing the jaws in their proper position to receive the coupling-pin and to limit the portions of the jaws which come in contact with the fingers, reducing the friction resulting therefrom to a minimum. The inner faces of the jaws have oppositely-disposed grooves or recesses 3^b, providing an elongated slot 9 when the jaws are brought together by the approach of the cars through the medium of the fingers 5 and the lugs or projections 8. It is apparent that upon the approach of the cars the lugs or projections will strike the outwardly-curved portions of the fingers 6 and be directed on the inclined faces of said fingers, which gradually turn the jaws on their pivots, bringing the faces thereof into vertical alinement, and that the space between the fingers of each draw-head is sufficient to permit said jaws to have a longitudinal movement upon each other until the grooves or recesses therein aline to form the elongated slot 9.

10 designates an inverted-L-shaped shifting-lever carrying on the free end of its horizontal arm a coupling-pin 11, and the vertical arm thereof is journaled on either draw-head in a bearing 12, adapting the link 11 to be swung in the arc of a circle and to have a limited vertical movement, permitting it to be inserted into and withdrawn from the slot 9 to lock and unlock the couplings.

13 designates the coupling and uncoupling rod slidably mounted in a bracket 14, secured

to the car at a convenient point to permit the locking and unlocking of the couplings from the top thereof, obviating all liability of accidents accruing therefrom. The rod extends a suitable distance above the top of the car and has its upper end bent upon itself to form a loop or hand-grip 15, and the lower end thereof terminates in a horizontally-disposed disk 16, adapted to lie upon one of the draw-heads 2, limiting the downward movement of said rod, and the disk is provided with a central perforation through which extends the vertical arm of the shifting-lever, permitting the inner portion of the horizontal arm to lie upon the upper surface of the disk. Extending upward from the disk are segmental flanges 17, forming shoulders 18 at their juncture with the disk.

It is obvious that the lever and rod form a shifting device and that an upward movement of the rod 13 will raise the shifting-lever and withdraw the coupling-pin from the slot 9, thereby unlocking the couplings, and that by a slight rotary motion of the rod one of the shoulders 18 is brought into contact with the horizontal arm, and by a further rotation of the lever the coupling-pin may be directed over and placed in a seat 19, which consists of a vertical slot in the draw-head adapted to contain the coupling-pin when not employed to lock the jaws. A reverse movement of the rod 13 will withdraw the coupling-pin from the seat 19 and place it in the slot 9 to lock the jaws. The coupling-pin 11 is of a length sufficient to pass entirely through the slot 9 and cylindrical in form, having the lower end thereof closed and tapered to assist the insertion of the pin in the slot 9, and the diameter thereof is less than that of said slot, permitting a slight horizontal and vertical movement of the jaws with relation to said pin and also permitting said jaws to have a limited movement upon their pivots to accommodate themselves to the position the cars assume in starting, stopping, and rounding curves without any liability of the jaws becoming uncoupled. The pin is preferably constructed of an outer casing 20 of sufficient strength to obviate all liability of its becoming damaged by any movement of the jaws and is formed at its upper end with a flange 21, adapted to rest upon the upper surfaces of the jaws to limit the downward movement of the pin in the slot 9. Within the casing 20 is a suitable core of any material, preferably of some hard wood, to afford additional protection to the casing 20, and passing through the coupling-pin thus formed and an elongated slot in the arm of the shifting-lever is a rod 22, having an enlarged head 23, thereby securing the coupling-pin to the shifting-lever to have a limited longitudinal movement thereon, permitting the pin to accommodate itself to the longitudinal movement of the jaws.

The jaws 5 are provided at their forward ends with a recess 24, providing lips 25, through which extend, to communication with said recess, slots 26, adapted to carry a coupling-pin to secure a link in said recess when two cars are to be coupled, one of which is not equipped with an improved coupler of the above-described type.

Fig. 6 of the drawings illustrates the pivoted jaws having a slight modification of the grooves or recesses 3^b, which consists in inwardly tapering the upper ends of said grooves or recesses, providing the slot 9 with a flared entrance to facilitate the insertion of the coupling-pin in the slot, and by the approach of the coupling-pin to the slot the tapered end thereof will through the medium of said flared entrance be readily directed into the slot.

The operation, construction, and advantages of the improvement will be readily understood from the foregoing description, taken in connection with the accompanying drawings, without any further reference thereto.

Having thus fully described the invention, what is claimed as new is—

1. The combination with draw-bars, of draw-heads secured thereto, and having formed integral therewith fingers having laterally-inclined faces, jaws pivotally mounted upon the draw-heads and having recesses forming a slot when brought together, said jaws being adapted to engage the inclined faces whereby they are swung in a horizontal plane to bring the recesses together, and a coupling-pin adapted to be inserted into said slot to lock the jaws.

2. The combination with draw-heads having seats therein, of jaws secured thereto, and having grooves or recesses forming a slot when brought together, a coupling-pin inserted into said slot locking the jaws, and means for raising and swinging said pin in the arc of a circle whereby it is withdrawn from the slot and placed in one of the seats.

3. The combination with draw-heads, of jaws secured thereto and having grooves or recesses forming a slot when brought together, a shifting-lever having a horizontal arm and a vertical arm, the latter being journaled on one of the draw-heads, a coupling-pin mounted upon the horizontal arm to have a longitudinal movement thereon, and means for operating said shifting-lever.

4. The combination with draw-heads, of jaws pivotally secured thereto and having grooves or recesses forming a slot when brought together and also having lugs or projections, fingers secured to the draw-heads and having laterally-inclined faces, against which is adapted to be directed the lugs or projections swinging the jaws in a horizontal plane to bring and hold the jaws together, a pin inserted into said slot locking the jaws, and means for withdrawing said pin.

5. The combination with draw-bars, of jaws secured thereto and having grooves or recesses forming a slot when brought together, and a coupling-pin to be inserted into said slot locking the jaws, and consisting of a casing having a shoulder, a core within said casing and

a rod passing through the coupling-pin to be attached to a shifting mechanism.

6. The combination with draw-bars, of draw-heads secured thereto, jaws pivotally secured to the draw-heads, and having recesses forming a slot when brought together, a shifting-lever having a horizontal arm, and a vertical arm, the latter being journaled on one of the draw-heads, a coupling-pin mounted upon the horizontal arm, a coupling and uncoupling rod provided with a disk having an opening for the reception of the vertical arm, and flanges upon the disk to engage the horizontal arm whereby it may be swung in the arc of a circle.

7. The combination with draw-bars, of draw-heads secured thereto and having formed integral therewith fingers having laterally-inclined faces, jaws pivotally secured to the draw-heads and having recesses forming a slot when brought together, a shifting-lever having a horizontal arm and a vertical arm, the latter being journaled on one of the draw-heads, a coupling-pin mounted upon the horizontal arm to have a longitudinal movement thereon, a coupling and uncoupling rod provided with a disk having an opening for the reception of the vertical arm, and flanges upon the disk to engage the horizontal arm whereby it may be swung in the arc of a circle.

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