

No. 621,253.

Patented Mar. 14, 1899.

A. KELLY.

CAR COUPLING.

(Application filed Apr. 16, 1898.)

(No Model.)

2 Sheets—Sheet 1.

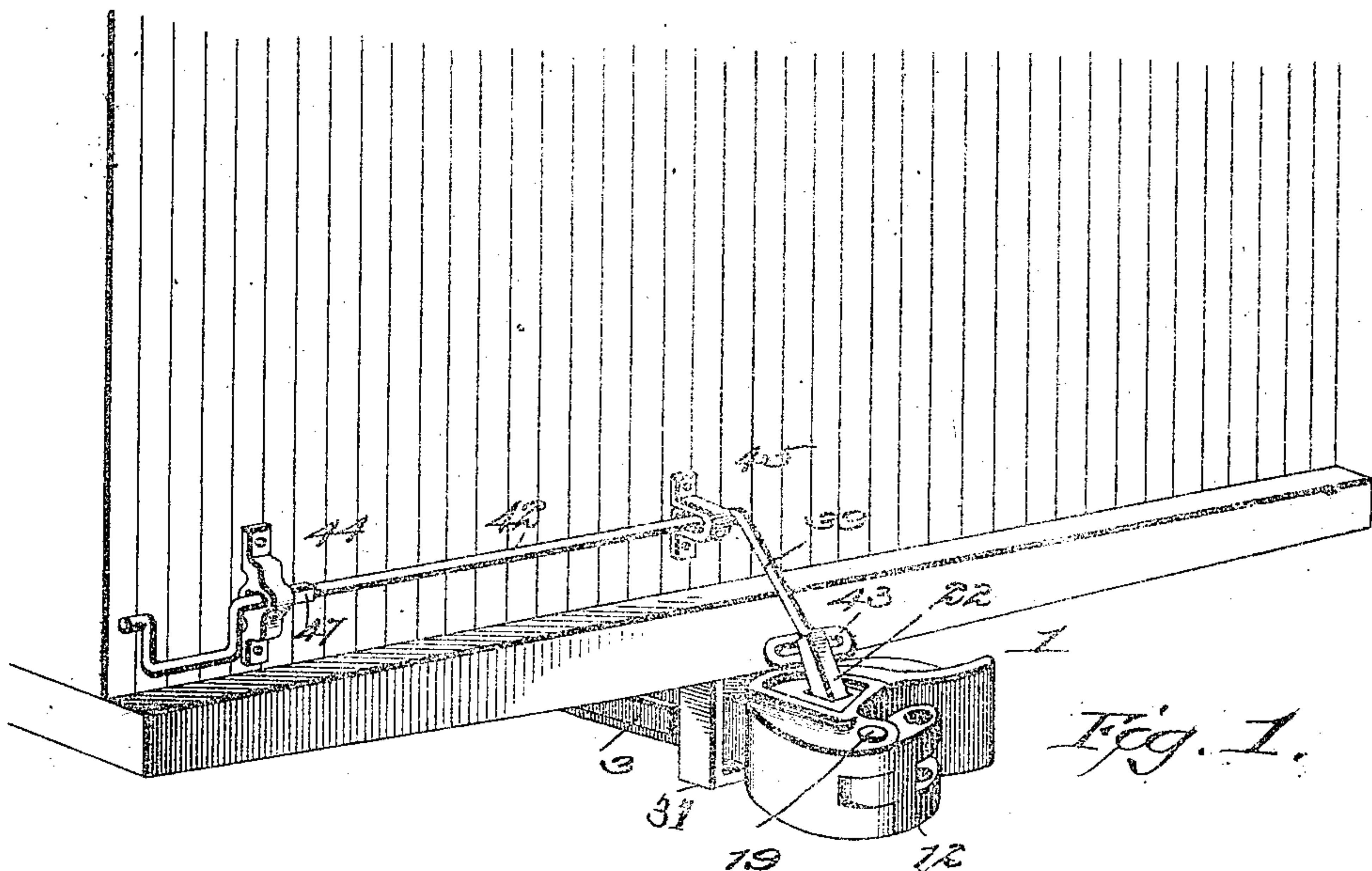


Fig. 2.

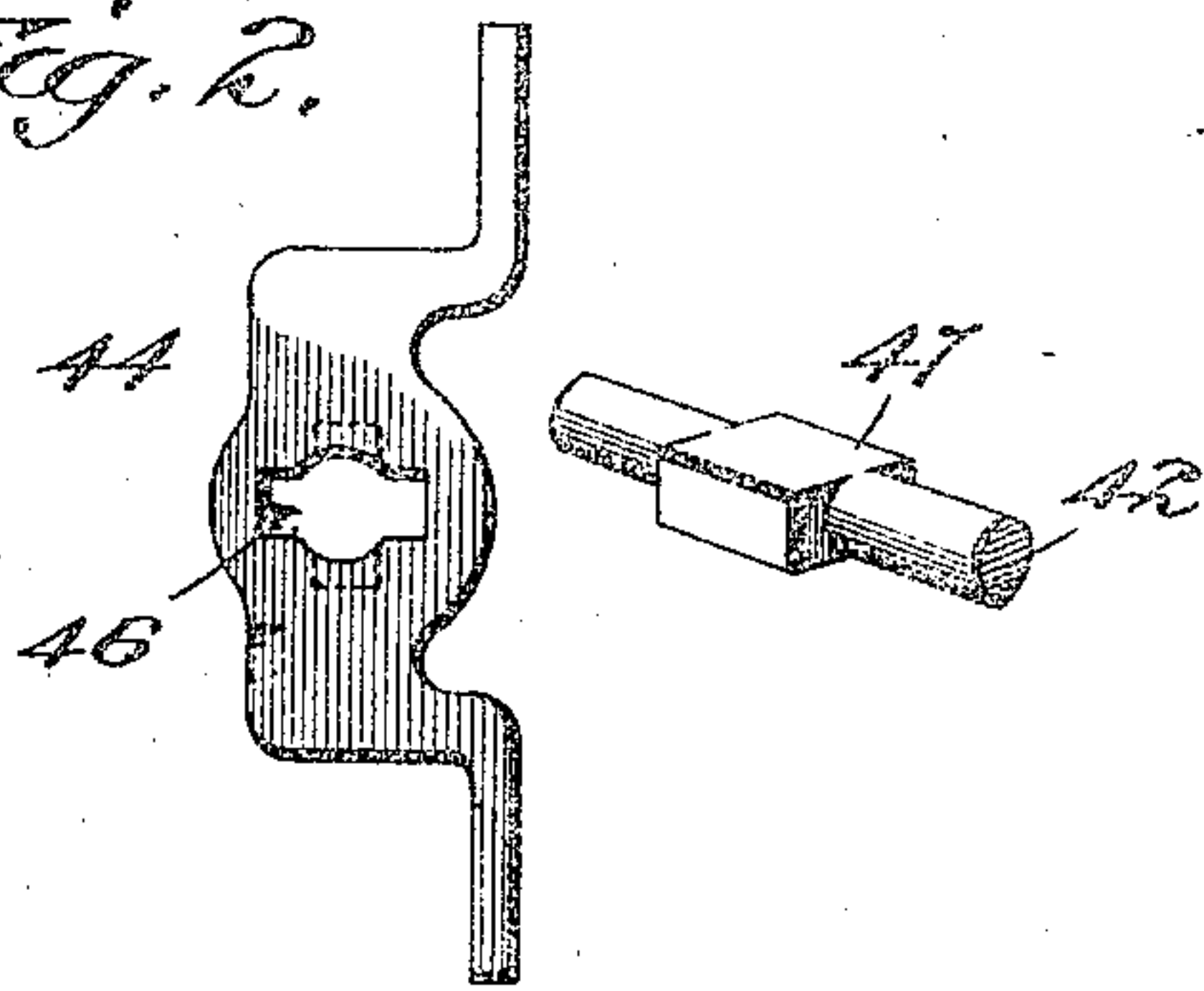


Fig. 3.

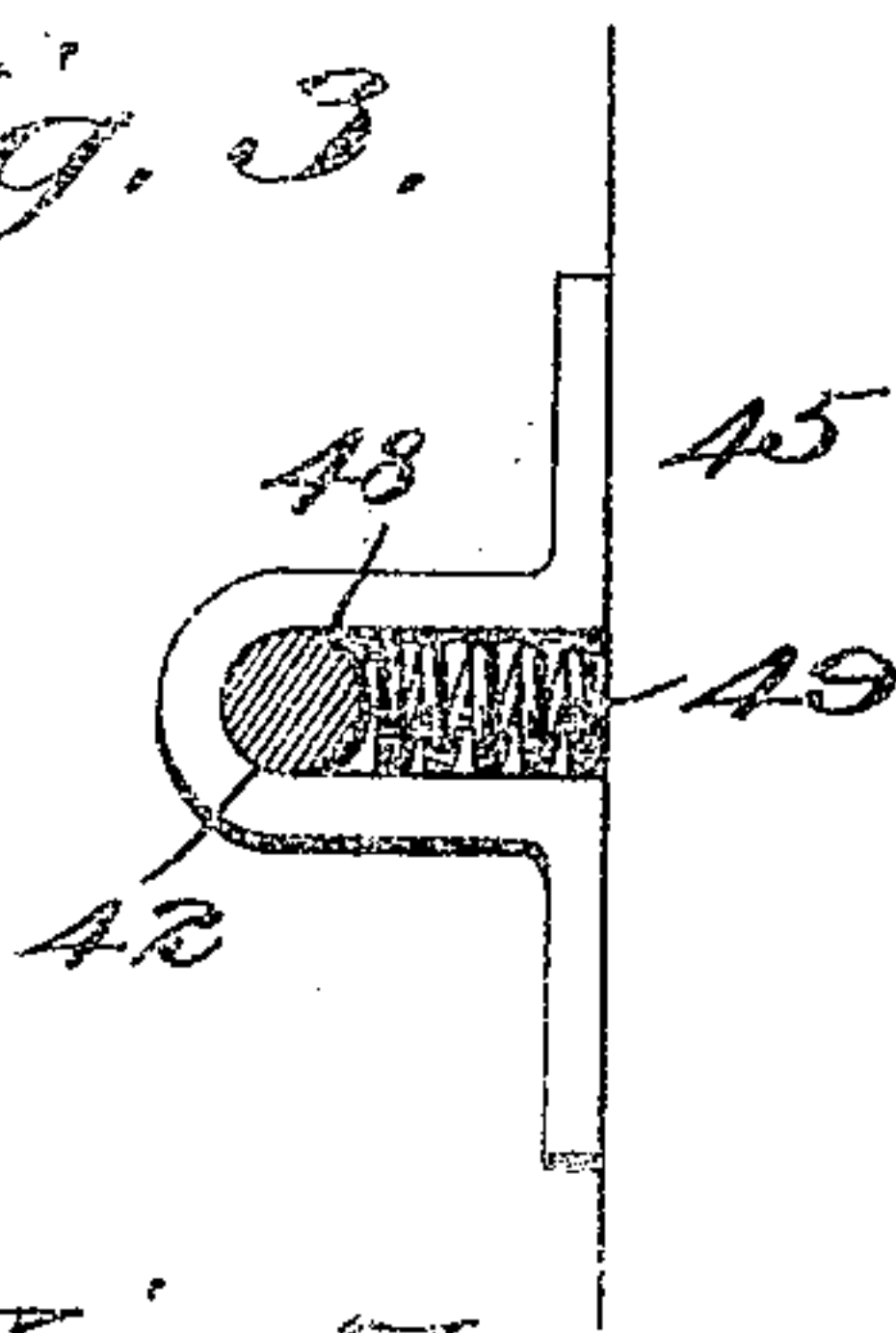


Fig. 6.

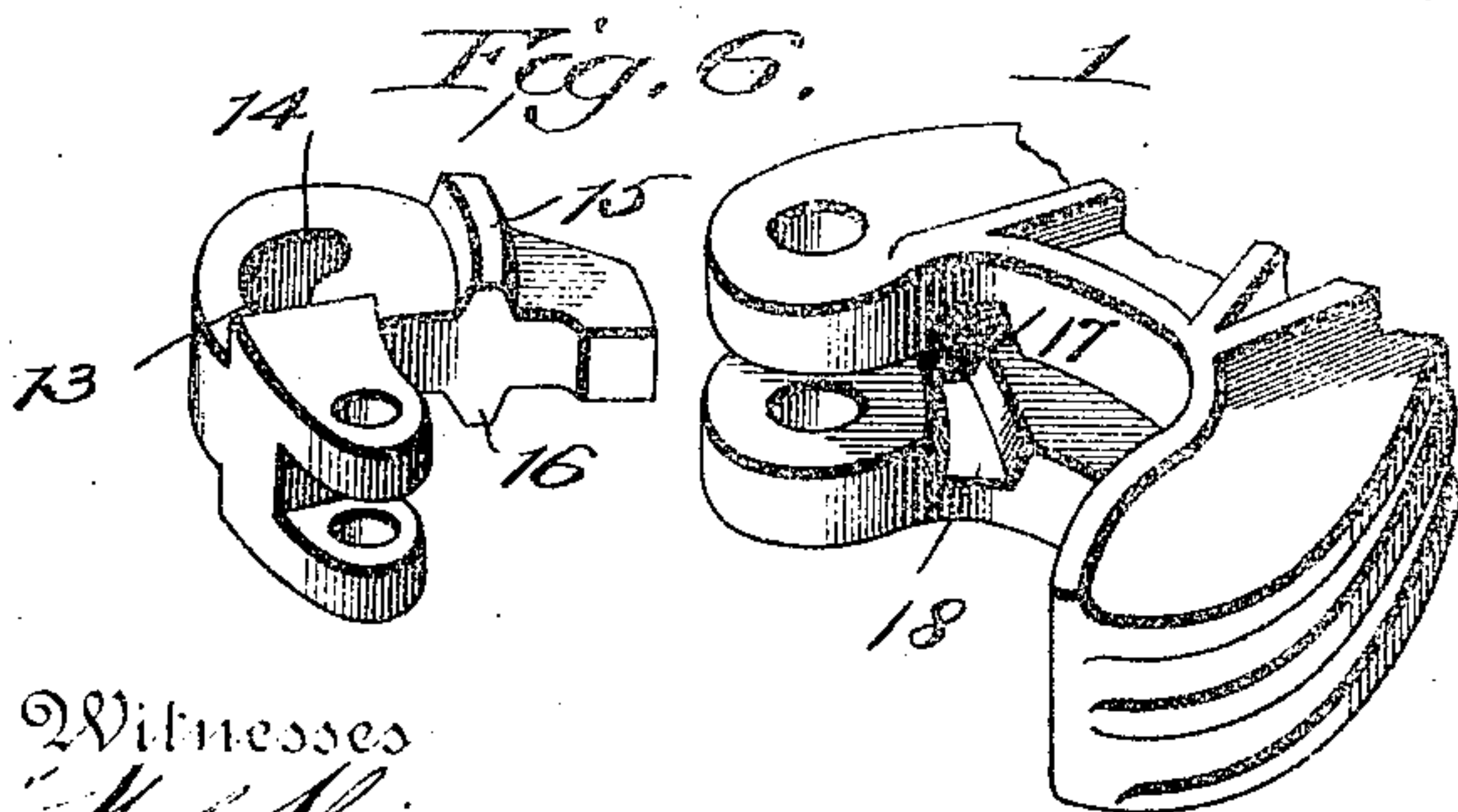
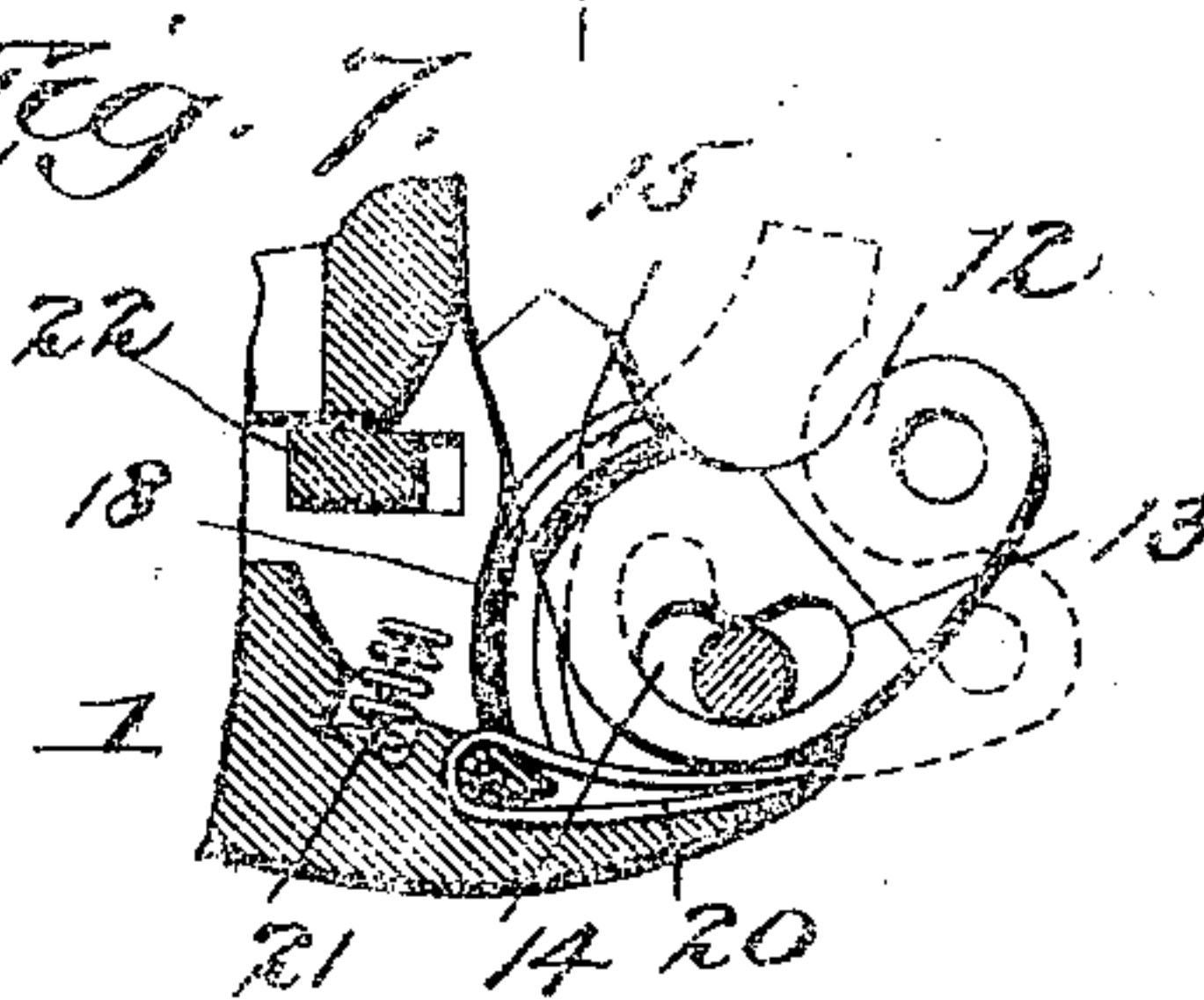


Fig. 7.



Witnesses

*Wm. H. Hildner*  
*Robert H. Hildner*

Inventor

*Alonzo Kelly*  
by *Chas. E. DeBois*  
*his* Attorney

No. 621,253.

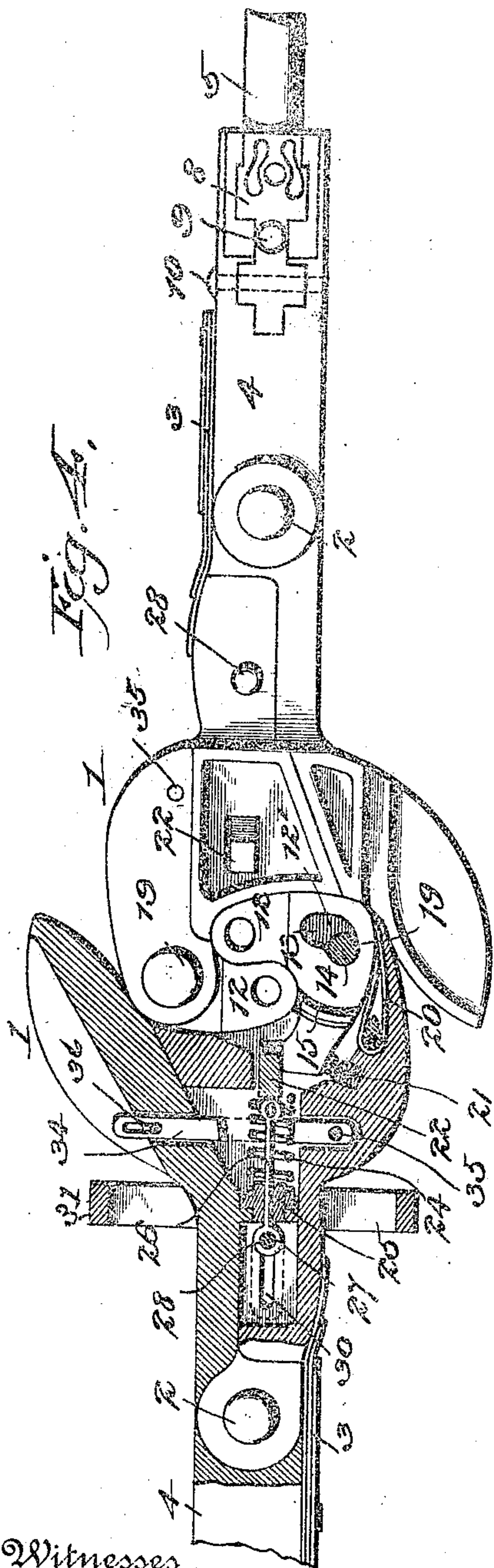
Patented Mar. 14, 1899.

A. KELLY.  
CAR COUPLING.

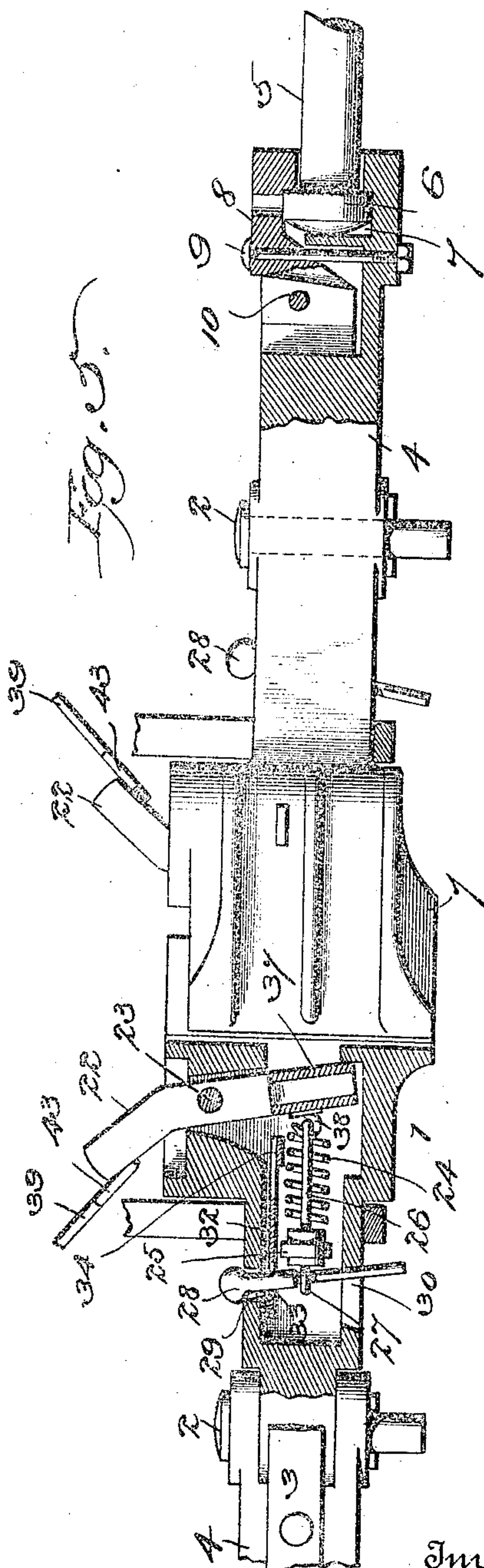
Application filed Apr. 18, 1898.

(No Model.)

2 Sheets—Sheet 2.



Witnesses  
*Wm. H. H. H. H.*  
*Ralph H. H. H.*



Inventor  
*Alonzo Kelly*  
*by Rhesa C. DeBois*  
His Attorney



# UNITED STATES PATENT OFFICE.

ALONZO KELLY, OF HARRISBURG, PENNSYLVANIA.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 621,253, dated March 14, 1899.  
Application filed April 18, 1898. Serial No. 877,999. (No model.)

*To all whom it may concern:*

Be it known that I, ALONZO KELLY, a citizen of the United States, residing at Harrisburg, in the county of Dauphin and State of Pennsylvania, have invented certain new and useful Improvements in Car-Couplers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My object is to provide an automatic car-coupler having improved means whereby uncoupling will be automatically accomplished should a draw-bar accidentally pull out.

A further object is the provision of novel devices adapted to permit twisting of the couplers on their longitudinal axes and also to allow them to yield laterally when the cars are going around a curve.

A still further object is to provide a draw-head and knuckle both of such improved construction that the strain will be divided between the pivot of the knuckle and the draw-head.

Another object is the provision of uncoupling mechanism of novel construction whereby uncoupling can be accomplished from the side of the car and the couplers can be prevented from coupling.

Having the foregoing and other objects in view, the invention consists of a car-coupler and uncoupling mechanism comprising certain improved features and combinations of parts appearing more fully hereinafter and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the end of a car equipped with my improved car-coupler and uncoupling mechanism. Figs. 2 and 3 are detail views of the improved bearings for the uncoupling-lever; Fig. 4, a plan view, partially in section; Fig. 5, a side elevation, also partly in section; and Figs. 6 and 7 are views showing the improved knuckle and draw-head and illustrating the different positions of the knuckle pivot-pin.

The draw-heads are shown at 1, and being duplicates one only will be described. The

draw-head consists of two parts, which are pivoted together at 2, so that they may spread or expand under lateral strain, as when the cars are going around a curve. A leaf-spring 3, secured to the draw-bar 4, has its free end bearing against the side of the pivoted section of the draw-head and keeps the latter normally closed. The tail-bolt 5 has a round head 6, which is received in a chamber 7 in the rear end of the draw-bar 4, this chamber being closed at the top by a cap 8, held in position by bolts 9 and 10. This construction permits of the easy connection of the draw-bar and tail-bolt, and a strong swiveled connection is thereby had, so that when the coupler is in use it can turn somewhat on its longitudinal axis, and hence more perfectly accommodate itself to the movements of the car.

The numeral 12 designates the knuckle, having the usual means for coupling it to a link-coupler, if the occasion for so doing arises. This knuckle has a pivot-pin opening or slot 12' extending therethrough from top to bottom, which is of substantially right-angular shape, being composed of the portions or branches 13 and 14. The tail of the knuckle is provided with arc-shaped ribs 15 and 16 on opposite sides, which are adapted for reception in corresponding grooves 17 and 18 in the pivoted section of the draw-head. The pivot-pin for the knuckle is shown at 19, the same passing through the opening 12', heretofore described.

The numeral 20 designates a ribbon-spring secured to the pivoted section of the draw-head and having both of its ends bearing on the knuckle. A coil-spring 21, seated in the draw-head, bears against the tail of the knuckle and constantly tends to open the latter.

A locking bar or latch 22 extends vertically within the draw-head, being pivoted thereto at 23 and having its lower end adapted for engagement with the tail of the knuckle. The upper end of the latch is bent or inclined toward the car. A coupling-box 37 is fitted over and secured to the squared lower end of the latch 22, being provided with a hook 38. A coil-spring 24 is horizontally disposed within the draw-head for holding the lower end



of the latch in locking position, one end of the spring being seated on a block 25, fixed in the draw-head, and the other end surrounding hook 38 and bearing against box 37. A horizontal link 26 is engaged with hook 38 and extends through the coil-spring, its opposite end being provided with an eye 27, adapted for the reception of a vertical pin 28. The upper portion of this pin passes through a hole 29 in the top of the draw-bar 4, this hole being large enough to allow the lower portion of the pin to swing in an elongated slot 30 in the lower portion of the draw-bar, so that by throwing the lower end of the pin backward the latch will be retracted and the knuckle freed. This operation of the pin is automatically performed by the usual yoke 31, which supports the draw-head, for it will be observed that should the draw-head pull out this yoke will come in contact with the lower end of the pin and pull it backward, thereby drawing on the lower end of the latch through the medium of the link and uncoupling the parts.

Within the draw-head is a longitudinally-disposed bar 32, provided with an elongated slot 33, through which the upper portion of the pin 28 passes. Connected to the forward end of the bar 32 is a transverse link 34, which is pivoted to one section of the draw-head at 35 and connected to the other section thereof by a slot-and-pin connection 36. This bar and link limits the spread of the sections of the draw-head, and should any of the parts attached to them break they will be suspended and prevented from falling on the track.

My improved uncoupling-lever 42 has an arm 39 at its inner end, which terminates in a trip 43, disposed in the same plane with the inclined upper end of the latch 22, said lever extending horizontally to the side of the car, where it is provided with a crank-handle, and being journaled in bearings 44 and 45, connected to the car. Block 44 has a horizontally-disposed bearing 46, adapted to receive a flat locking lug or member 47 on the lever when the latter is turned and pulled in the direction of its longitudinal axis, whereby the lever may be locked and the latch 22 held retracted, so that the knuckle in the draw-head will be freed and coupling prevented. The bearing 45 has a bearing-block 48, kept continually in contact with the lever by a coil-spring 49, which bears against the car, so that turning of the lever by the jolting of the car is prevented. When the uncoupling-lever is in its normal position, the arm at its inner end lies against the side of the car, with the wiper-head back of the inclined upper end of the latch. Upon turning the crank the arm is raised and the head 43 engages and moves the upper end of the latch, causing its lower end to disengage the tail of the knuckle and allowing the parts to uncouple. The lever can then be locked, as before de-

scribed. When the lever is returned to normal position, the spring 24 will throw the latch into locking position. These operations can be accomplished with safety from the side of the car.

The peculiar connections between the knuckle and the draw-head constitute valuable features of the present invention. When the knuckle is open, the pivot-pin 19 is located in the end of branch slot 13, where it is held by the action of the longer portion of the ribbon-spring 20. When the tail of the knuckle is struck during the coupling operation, the movement of the knuckle causes the pin to assume a position at the angle of the branch slots, and when coupling is finally accomplished the pull exerted on the knuckle causes the pin to pass into slot 11. When the knuckle is struck by the companion coupler, the ribs on said knuckle enter the grooves in the draw-head. Consequently upon the knuckle becoming locked the strain is divided between the ribs and grooves and the pivot-pin, so that liability of breakage of the latter is considerably lessened and lateral movement of the knuckle is also prevented.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a car-coupler, the combination with a draw-head, of a knuckle having a continuous pivot-pin slot or opening composed of two communicating branch slots disposed at an angle to each other, and a pivot-pin passing through the draw-head and the slot aforesaid, and adapted for movement in the branch slots relatively of the knuckle, caused by the movement of the latter, substantially as described.

2. In a car-coupler, the combination with a draw-head, of a knuckle having a continuous pivot-pin slot or opening composed of two communicating branch slots, a pivot-pin passing through the draw-head and slot, and adapted for movement in the branch slots relatively of the knuckle, and a spring coöperating with the knuckle to maintain the pin in proper position in the branch slots when the knuckle is in its different positions.

3. In a car-coupler, the combination with a draw-head, of a knuckle having a pivot-pin slot composed of communicating branch slots disposed substantially at right angles to each other, a pivot-pin passing through said slot, an arc-shaped rib on the knuckle, and an arc-shaped groove in the draw-head adapted to receive said rib, substantially as described.

4. In a car-coupler, the combination with a draw-head composed of sections pivoted together and adapted to expand, of external means for keeping said sections normally closed, and a link pivoted to one section extending through the mouth of the coupler and connected to the other section by a slot-and-pin connection, substantially as described.

5. In a car-coupler, the combination with a draw-head composed of two sections pivoted



together, of means for keeping the sections normally closed, a link adjustably connecting the sections together and a bar connected to said link and also connected to one of the sections, substantially as described.

5 6. In a car-coupler, the combination with a draw-head having a recess or chamber, of a tail-bolt having a rounded head free to turn in said chamber, a cap for said chamber and a fastening for the cap, substantially as described.

7. In a car-coupler, the combination with a draw-head, of a coupling mechanism, a movable latch for locking the coupling mechanism, a coil-spring having one end seated in the draw-head and the other end bearing against the latch, a pin having one end loosely pivoted and its other end movable in a slot in the draw-head, a link connecting the latch with the pin and passing through the coil-spring, and a trip adapted to engage the free end of the pin when the draw-head becomes detached, substantially as described.

8. In a car-coupler, the combination with

a draw-head, of coupling mechanism, a releasable latch for securing the coupling mechanism, a pin passed loosely through the draw-head, a link connecting the pin to the latch, a spring for actuating the latch and pin, and a draw-head-supporting yoke adapted to engage the pin and release the latch when the draw-head becomes detached, substantially as described.

9. The combination with a draw-head and coupling mechanism carried thereby, of a latch for said coupling mechanism, a rockable uncoupling-lever having a wiper-arm adapted to engage the latch, a spring-pressed bearing for said lever which acts as a brake therefor, and means for locking the lever in uncoupling position, substantially as described.

In witness whereof I affix my signature in presence of two witnesses.

ALONZO KELLY.

Witnesses:

W. H. KISTER,  
WM. C. ARMOR.