

No. 756,645.

PATENTED APR. 5, 1904.

W. H. JOHNSON, T. A. SAVAGE & A. T. NEWELL.

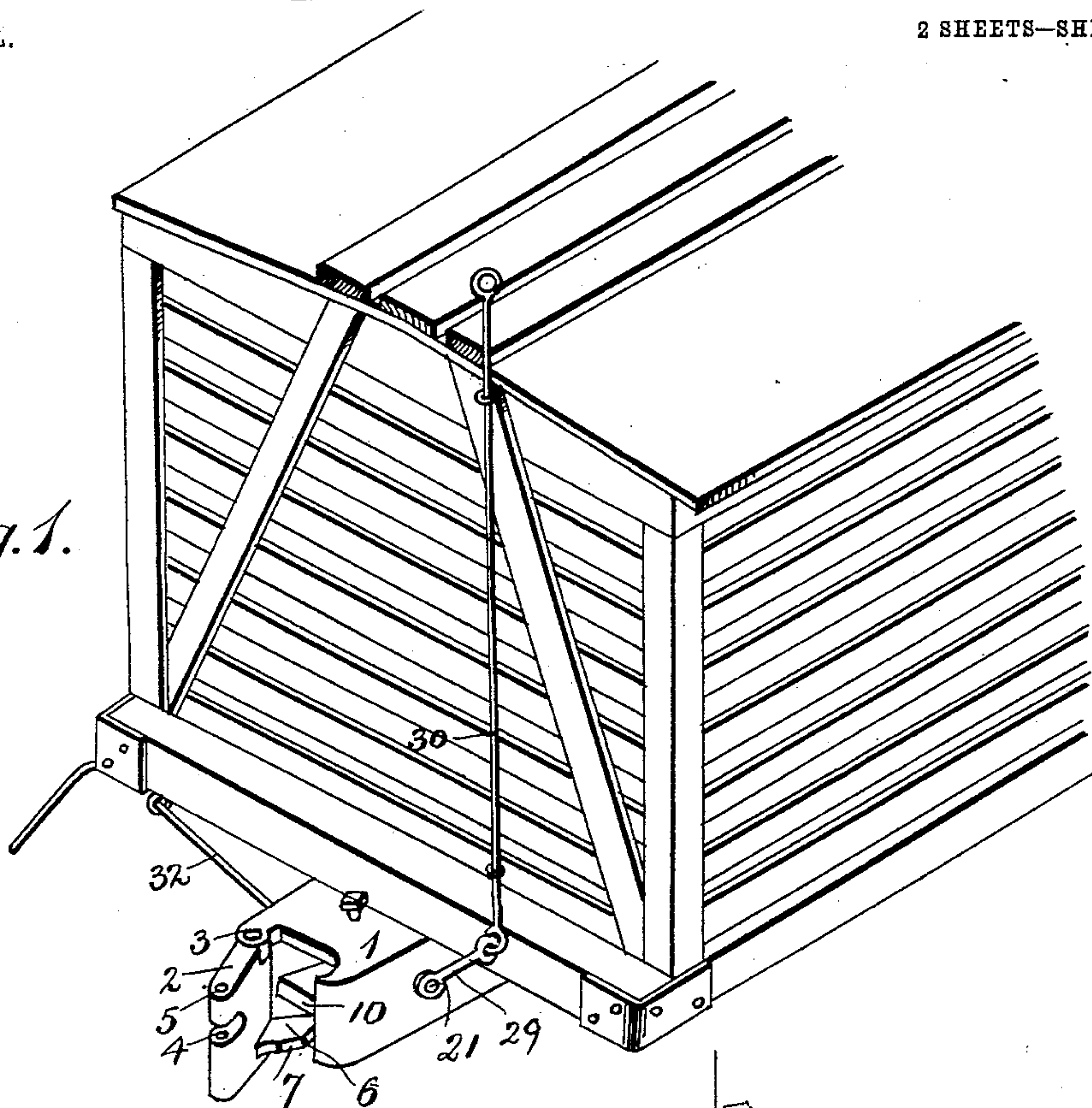
CAR COUPLING.

APPLICATION FILED JUNE 18, 1903.

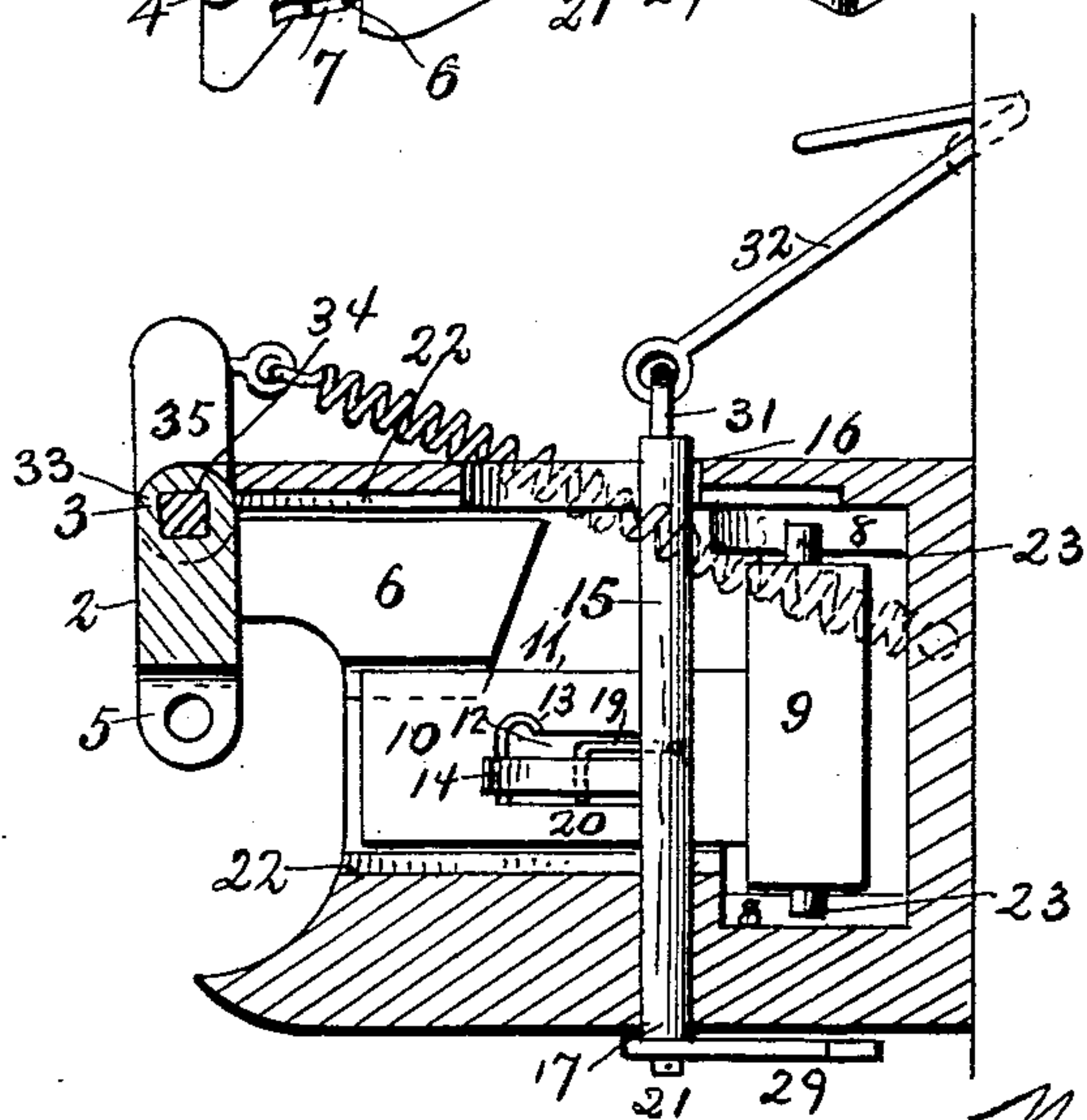
NO MODEL.

2 SHEETS—SHEET 1.

*Fig. 1.*



*Fig. 2.*



WITNESSES:  
A. L. Orrand  
E. P. Gaulconer.

Inventors  
W. H. Johnson  
T. A. Savage  
A. T. Newell  
By J. S. Duffie Attorney

No. 756,645.

PATENTED APR. 5, 1904.

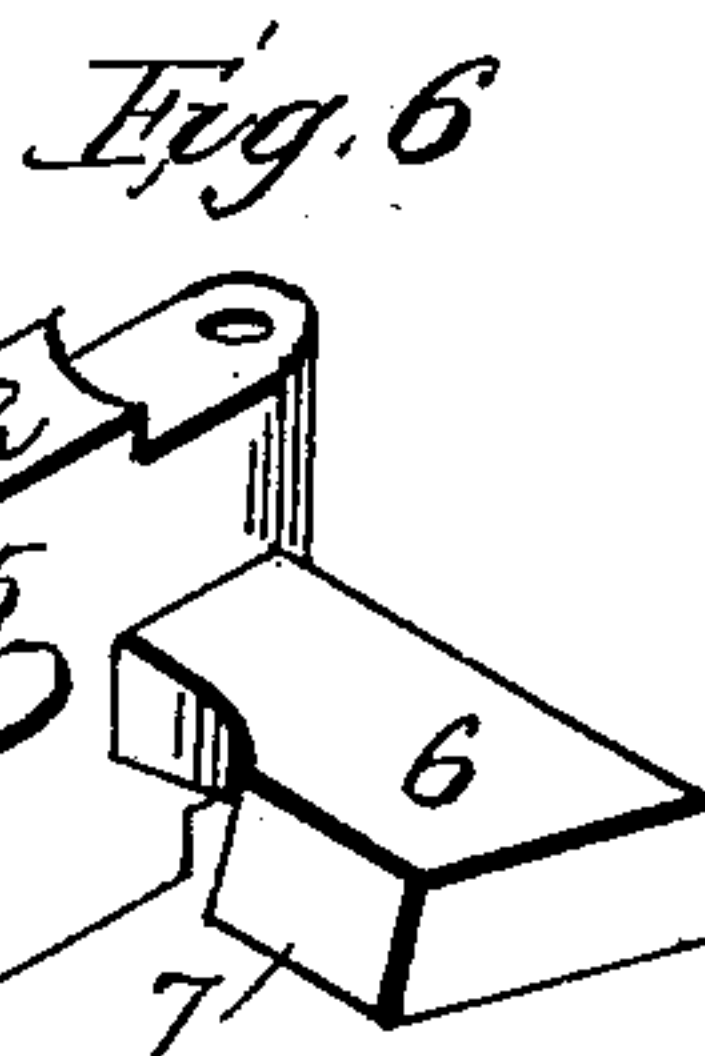
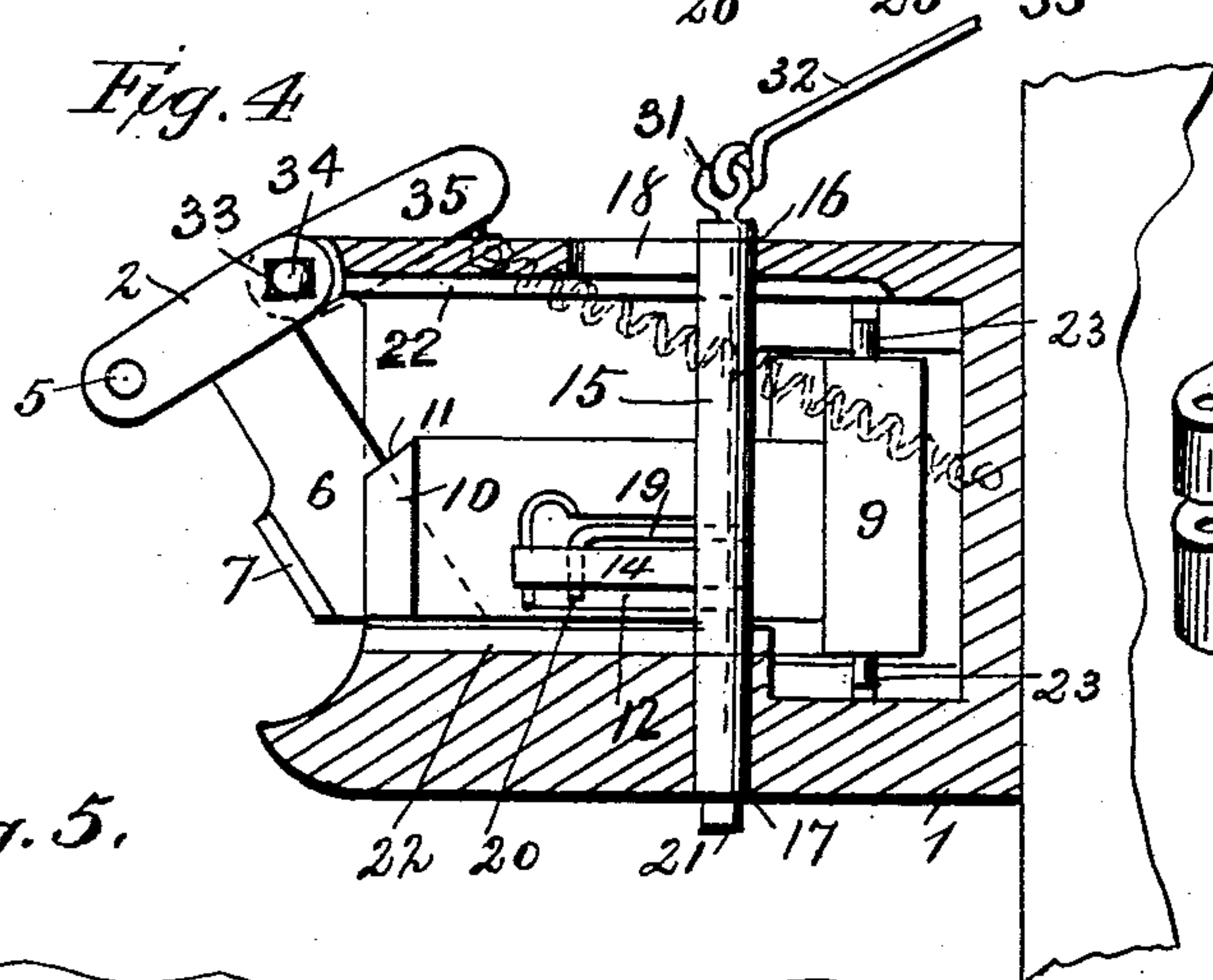
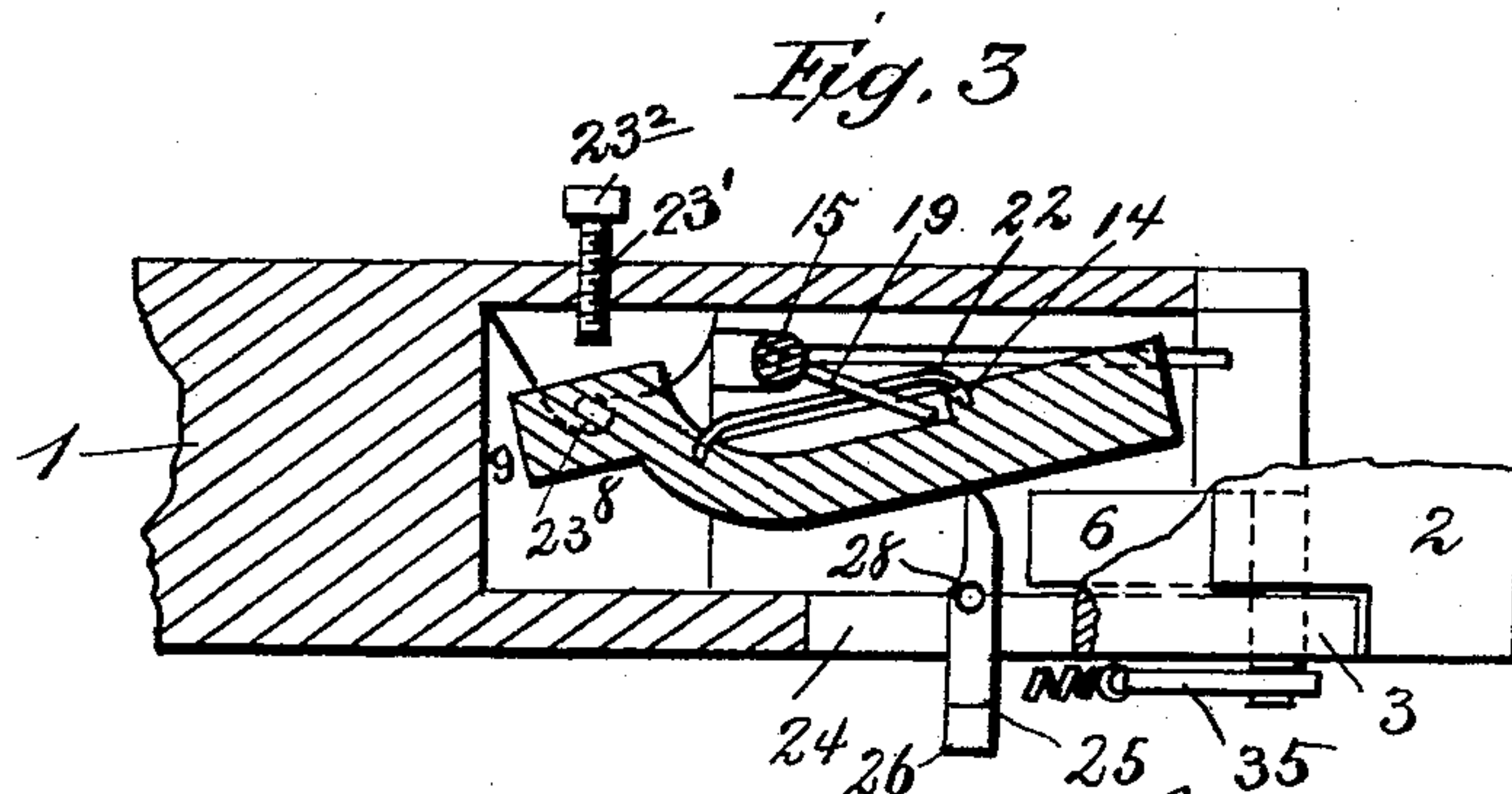
W. H. JOHNSON, T. A. SAVAGE & A. T. NEWELL.

CAR COUPLING.

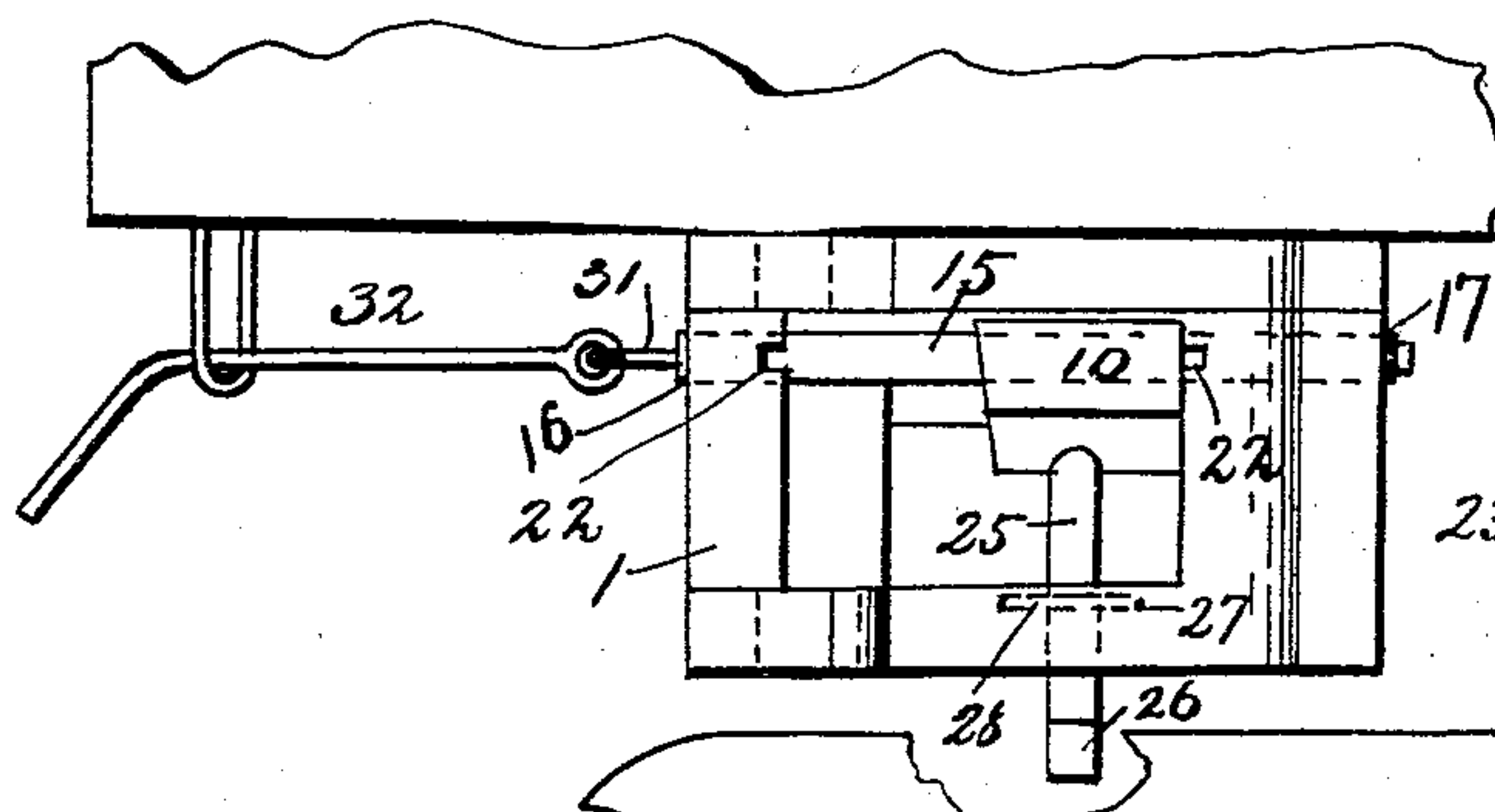
APPLICATION FILED JUNE 16, 1903.

NO MODEL.

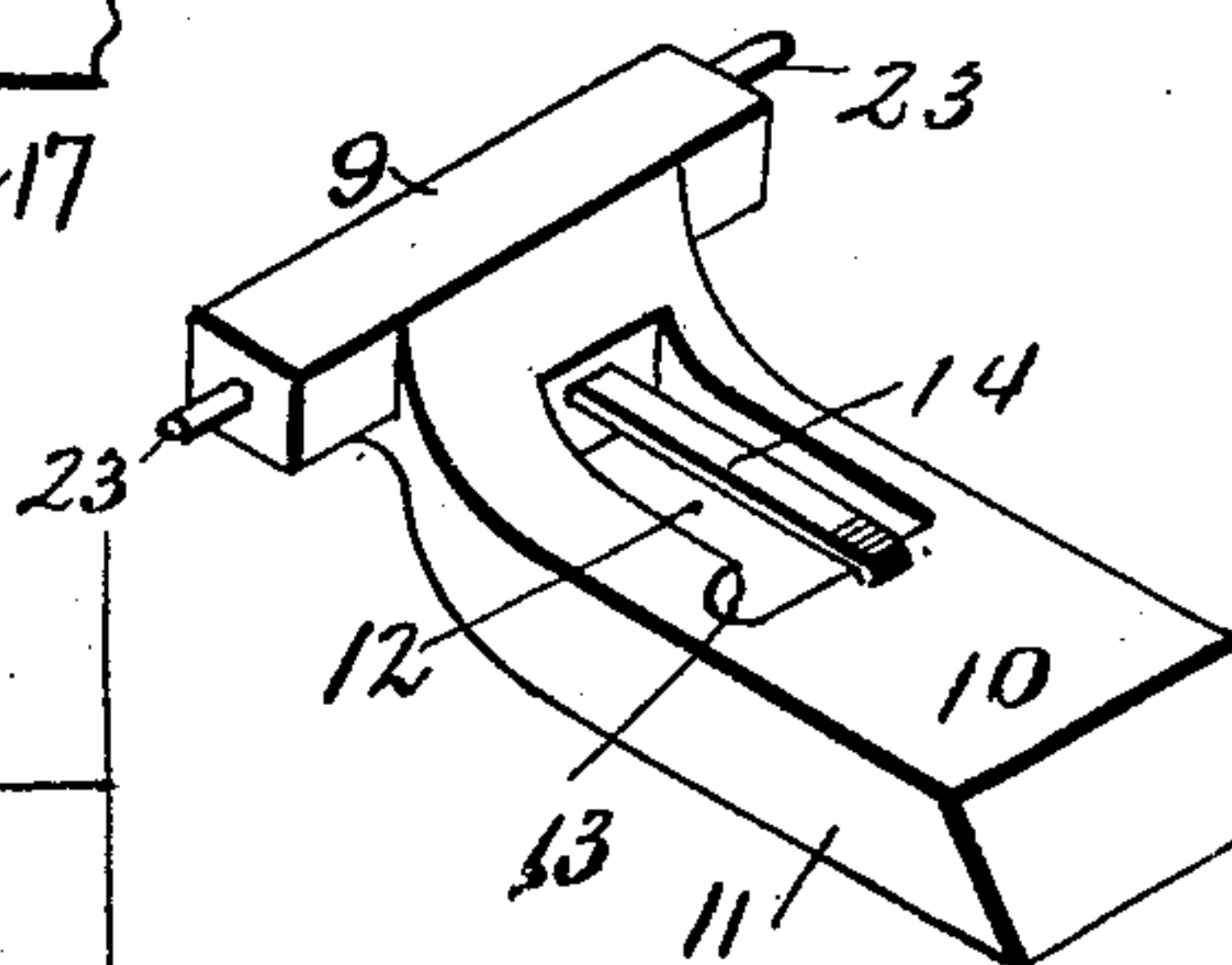
2 SHEETS—SHEET 2.



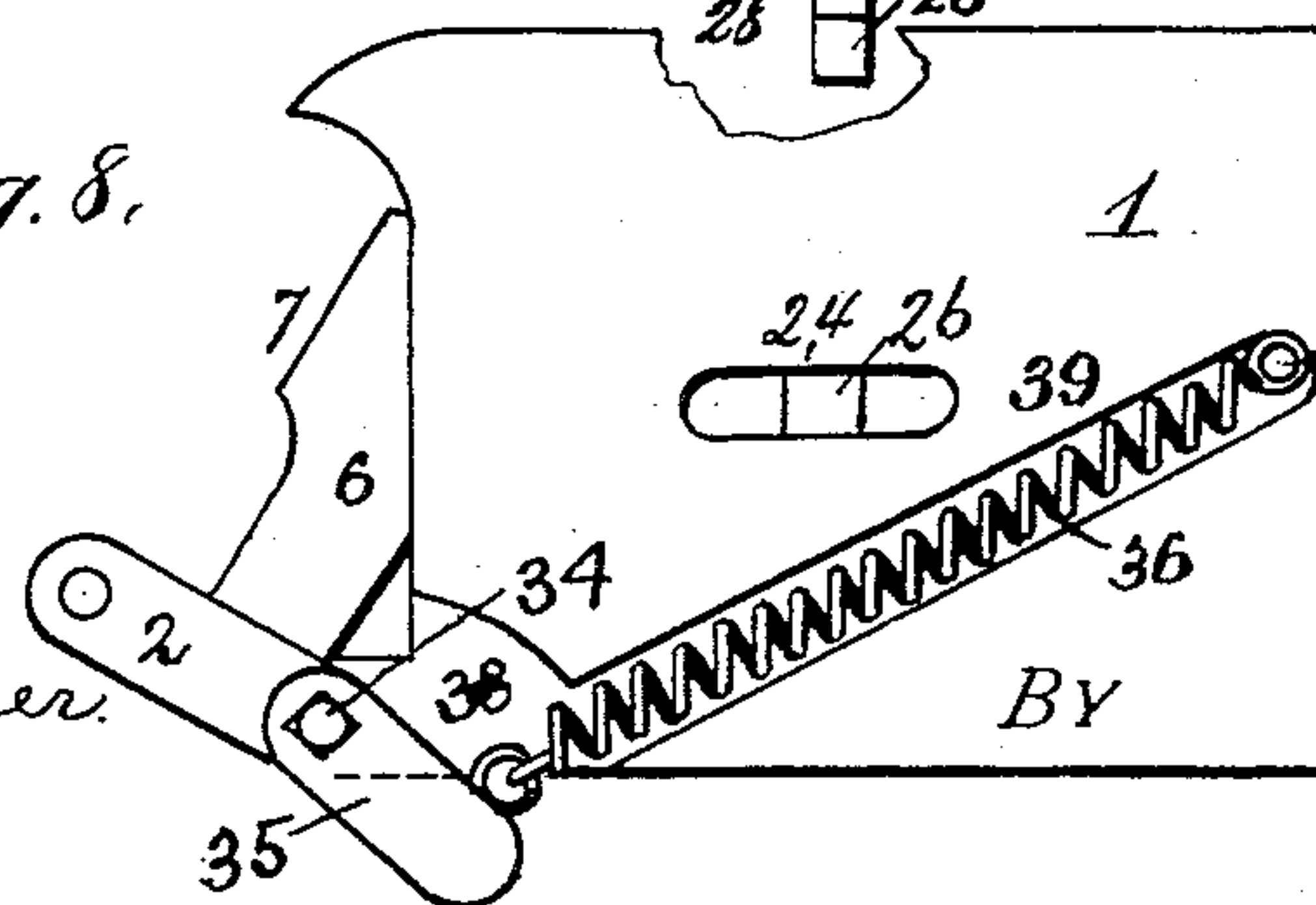
*Fig. 5.*



*Fig. 7.*



*Fig. 8.*



WITNESSES:

*J. L. Ormrod*

*E. P. Gaulcomer*

*Inventors*

*W. H. Johnson*

*T. A. Savage*

*A. T. Newell*

*By J. S. Duffie Attorney*



# UNITED STATES PATENT OFFICE.

WILLIAM HENRY JOHNSON, THOMAS ALDEN SAVAGE, AND ARTHUR THOMAS NEWELL, OF KANSAS CITY, MISSOURI; SAID SAVAGE ASSIGNOR TO SAID JOHNSON AND NEWELL.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 756,645, dated April 5, 1904.

Application filed June 16, 1903. Serial No. 161,685. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM HENRY JOHNSON, THOMAS ALDEN SAVAGE, and ARTHUR THOMAS NEWELL, citizens of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Car-Couplers; and we 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.

Our invention is a car-coupler built somewhat after what is known as the "Janney" type.

This invention is an improvement, as we believe, over all other car-couplers because of its simplicity and safety. It is easily coupled and uncoupled and may be uncoupled from the side as well as from the top of the coach, and it will not become uncoupled no matter how rough the road may be or how sharp the curves. The knuckle is automatically held open and is always ready to couple when the couplers bump together.

In the accompanying drawings, Figure 1 is a perspective view of one end of a coach with our car-coupler attached. Fig. 2 is a horizontal sectional view of the car-coupler, the top part being removed, showing the lower part of the draw-head and the operating mechanism, the knuckle being locked. Fig. 3 is a vertical longitudinal sectional view. Fig. 4 is a horizontal longitudinal sectional view substantially the same as Fig. 2, except that the knuckle is unlocked. Fig. 5 is a front end view, the knuckle and the locking-arm being removed and the lock-block elevated. Fig. 6 is a perspective view of the knuckle and the locking-arm. Fig. 7 is a perspective view of the lock-block. Fig. 8 is a bottom plan view.

Our invention is described as follows:

1 is the draw-head.

2 is the knuckle, hinged in bearings 3, extending from the front end of the draw-head.

4 is a slot in which the end of a link or bar may be inserted when the coupler meets with a coach having either of such coupling devices, and 5 represents perforations through which a locking-pin may be inserted.

6 is the locking-arm, rigidly secured to the inner face of the knuckle. The inner face of this locking-arm has its inner edges sloped upwardly.

In the rear end of the draw-head are two uncovered bearings 8, in which is pivoted the rear end 9 of the lock-block 10. The inner face 11 of said lock-block is beveled, so that its upper edge inclines in the direction of the locking-arm 6. The purpose of this incline is to enable the lock-block to be raised without obstruction when it is necessary to do so. The lock-block 10 has in its upper face a depression or recess 12, and extending from such recess and at right angles is another recess 13. Extending from the rear part 9 of said lock-block forward and beyond the depression 12 is a bar 14, firmly secured to said lock-block. In the draw-head and just above the rear end of said bar is a rod 15, journaled in perforations 16 and 17, one on each side of the draw-head, and extending from the perforation 16 horizontally is a slot 18, and secured in said rod 15 is an arm 19, having a right-angle bend 20. Said right-angle bend works in the said depression 12 (see Fig. 7) and under the bar 14. It will be observed that the said rod 15 is the same size its entire length, except the square bearing part 21 at one end.

The above construction of the lock-block, with its double depression and its bar 14, the rod 15, with its arm 19 and right-angle bend 20, is such that by raising the rear end of the lock-block a little out of its bearings and its front end a little and turning the arm 19 forward it may be withdrawn from under the bar 14 and out by the way of the depression 13 and then out through the slot 18, and thus entirely removed from the draw-head and repaired, if necessary, and returned to its former position, and when out of position, as above described, the lock-block may also be removed because running from the perforations 16 and



17 are grooves 22, through which the bearing-pins 23 of said lock-block may be withdrawn. Thus the entire inside mechanism may be removed for repairs and other purposes; but to  
 5 prevent the bearing-pins 23 from being jolted out of their bearings 8 a threaded perforation 23' is made through the upper wall of the draw-head on a line with said bearing-pins, and a threaded bolt 23<sup>2</sup> is screwed down through  
 10 said threaded perforation until its lower end comes nearly in contact with the upper face of the rear part of said lock-block.

Running longitudinally through the bottom wall of the draw-head is a vertical slot 24, in  
 15 which is pivoted a weighted swinging latch 25, there being a weight of heavy material 26 secured to its lower end.

Running crosswise of the lower wall of the draw-head, in its inner face and across the longitudinal slot 24, is a cross-slot 27, (see Fig. 5,) in which is embedded a pin 28, having been passed through the swinging latch 25, so that when the inside mechanism has been removed from the draw-head this pin 28 may be pushed  
 20 up out of the cross-slot 27, and this swinging latch and pin may also be removed. So it will be seen that the entire inside mechanism of this car-coupler may be removed from the draw-head, though the said draw-head be cast  
 25 all in one piece.

One end of the rod 15 is square, as shown at 21, to which is secured a lever-arm 29, to which lever-arm is secured a vertical rod 30, extending to the upper part of the coach, by which  
 35 the mechanism of the coupler may be operated. The other end of the rod 15 is provided with an eye 31, in which is secured an elbow-lever 32, extending to one side of the coach, by means of which the coupler may be unlocked  
 40 by a person on the ground.

By reference to Figs. 1 and 4 it will be seen that the locking-arm 6 is so constructed that while the knuckle 2 is in position it cannot escape from the mouth of the draw-head nor  
 45 from under the forward end of the lock-block, and consequently when the coupler is unlocked the knuckles stand in an unlocked position and are ready to be locked at any time by simply moving the two parts of the coupler  
 50 together. This operation throws the locking-arm back and to the right of the lock-block, when the lock-block of its own weight falls immediately down and is held in that position by the locking-arm. To unlock the coupler,  
 55 raise the rod 30 or turn the arm of the elbow-lever 32 up, either of which operations raises the front end of the lock-block, and when the lock-block is so raised the weight 26 on the end of the swinging latch 25 drops down and  
 60 throws the sharp end of said latch up, which immediately catches under and against the lower face of the lock-block and holds it in that position, so that when either one of the coaches moves away the coupler unlocks, and  
 65 when unlocked, as stated above, the end of the

locking-arm 6 still remains under the extreme forward end of the lock-block and is ready to be driven back by the other half of the coupler, and when driven back its extreme end strikes against the upper end of the swinging  
 70 latch, throws it back, and allows the lock-block to fall down in position, and the coupler is again locked.

It has been observed that after a coupler has been used for some time the parts become  
 75 worn and loose, and the knuckle and the locking-arm is liable to swing back in place or so nearly so that when the two parts of the coupler meet they do not interlock. To avoid these accidents, we make the perforation 33 in  
 80 the knuckle square and that part of the bolt 34 which fits in the knuckle also square, so that when the bolt is turned the knuckle will also be turned, and we also make the lower end of the bolt after it has passed through the  
 85 draw-head square, and on this square end of the said bolt we rigidly secure a lever 35, and to the free end of this lever we secure one end of a coil-spring 36, the other end of which is secured to a pin 37 at the rear end of the  
 90 coupler. This lever 35, spring 36, and pin 37 are on the bottom of the coupler, the lever playing in a recess 38 and the spring and pin fitting in a groove 39. Consequently just as soon as the lock-block is raised the said spring  
 95 and lever throw the knuckle and locking-arm out and hold them in that position until they are thrown back in locking position by the coming together of the two parts. The recess and groove are not absolutely necessary,  
 100 as the lever and spring may operate without them. Thus it will be seen that this coupler does away with the necessity of the link and pin; but still a link and pin may be used in connection therewith when it comes in con-  
 105 tact with an old-fashioned draw-head that uses a link and pin. It will also be observed that the perforations for the lever are through the side walls instead of on top of the draw-head. Thus said perforations cannot be filled with  
 110 ice or be otherwise clogged. It will be further observed that with the exception of the lever-arms the entire mechanism, except the knuckle, is inside of the draw-head and protected from ice and otherwise and that the lever 35  
 115 and spring 36 are attached under the draw-head and are therefore protected.

The bevel sides of the lock-block and the locking-arm enable the lock-block to be raised without slack of cars, which makes it more  
 120 convenient, is a time-saver, avoids breakage, inconvenience, and trouble and time attending a full stop, and in connection with the rod extending above the coach enables the operator to uncouple a car while the train is in  
 125 motion, even on upgrade, and in making a flying switch, and it will be further observed that this coupler is an advantage over others in this, the lock is really a safety-lock and keeps the cars from becoming uncoupled while  
 130



the train is in motion, even on downgrades. Further, the locking-arm resting under the end of the lock-block and its free end not extending beyond the mouth of the draw-head it will couple without fail by an easy coming together of the cars without any hard bumping.

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination of the draw-head, having in its rear end, a pair of uncovered bearings 8, horizontal perforations 16 17, through the side walls of said draw-heads, a short distance in advance of said uncovered bearings; a horizontal slot 18, extending forward from one of the perforations 16, through the side wall; grooves 22, in the inner face of said walls, extending horizontally from said uncovered bearings 8, to the mouth of the draw-head; the lock-block 10, having its right edge 11, slightly underbeveled, and having in its upper face a depression 12, and leading from said depression, at right angles, an extension-depression 13; bearing-pins 23, secured in each edge, and rear end of said lock-block; a threaded bolt 23', working down through a threaded perforation in the upper wall of the draw-head and adapted to keep said bearing-pins from jumping out of the bearings; a bar 14, secured longitudinally over the center of said depression 12; a rod 15, journaled in the perforations 16 17, in the walls of said draw-head; an arm 19, secured in said rod, having a right-angle bend 20; said right-angle bend 20, working under said bar 14; said rod adapted to be operated by levers, and to cause the said right-angle bend 20, to elevate the front end of the lock-block; a weighted and pivoted swinging latch 25, pivoted in a longitudinal slot 24, in the lower wall of the draw-head, and adapted to turn and throw its lighter end up, and prop said lock-block up; a knuckle 2, pivoted in the front end of the said draw-head, and a locking-arm 6, having an upper bevel 7, secured to the inner face of said knuckle, and adapted to trip said swinging latch, and drop to the right side of said lock-block, and thus lock the knuc-

kle 2, in a position across the mouth of the draw-head; a lever 35, secured to the lower end of the rod 34; a coil-spring 36, having one end secured to the free end of said lever and its other end to a pin 37, in the rear end of the draw-head, said lever and spring adapted to hold said knuckle 2, open, substantially as shown and described and for the purposes set forth.

2. In a car-coupler, substantially as described, uncovered bearings situated in the rear end of said draw-head; a lock-block having a longitudinal and right-angle depression in its upper face; a bar secured longitudinally over said depression; a rod pivoted crosswise in the walls of the draw-head, and having an arm extending downwardly, and bent at right angles under said bar; said rod adapted to be turned and thereby raise the front end of said lock-block; a bolt passing down through the upper wall of the draw-head and over the rear end of said lock-block and adapted to keep the bearing-pins from jumping out of their sockets; substantially as shown and described and for the purposes set forth.

3. In a coupler, substantially as described, a lock-block 10, hinged longitudinally in the draw-head, its front end adapted to be raised by a lever; a knuckle 2, pivoted in the front end of said draw-head, carrying an arm 6, adapted to drop behind said lock-block and lock said knuckle 2, across the mouth of the draw-head; a lever 35, rigidly secured to the lower end of the bolt 34, carrying said knuckle and locking-arm; a coil-spring 36, having one end secured to the free end of the lever 35, and its other end, to a pin in the rear end and lower face of the draw-head, said spring and lever adapted to hold said knuckle open, substantially as shown and described and for the purposes set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM HENRY JOHNSON.  
THOMAS ALDEN SAVAGE.  
ARTHUR THOMAS NEWELL.

Witnesses:

JAMES H. ARTHUR,  
WILLIAM R. HOFFMANN.