

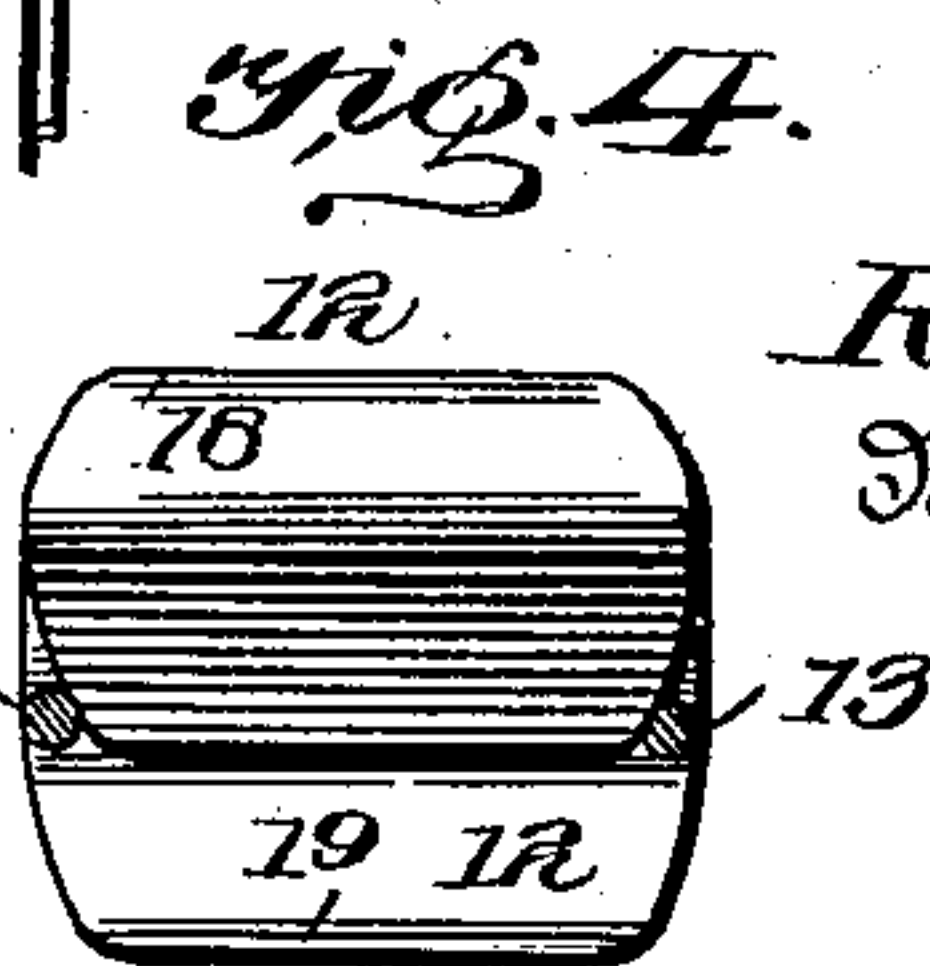
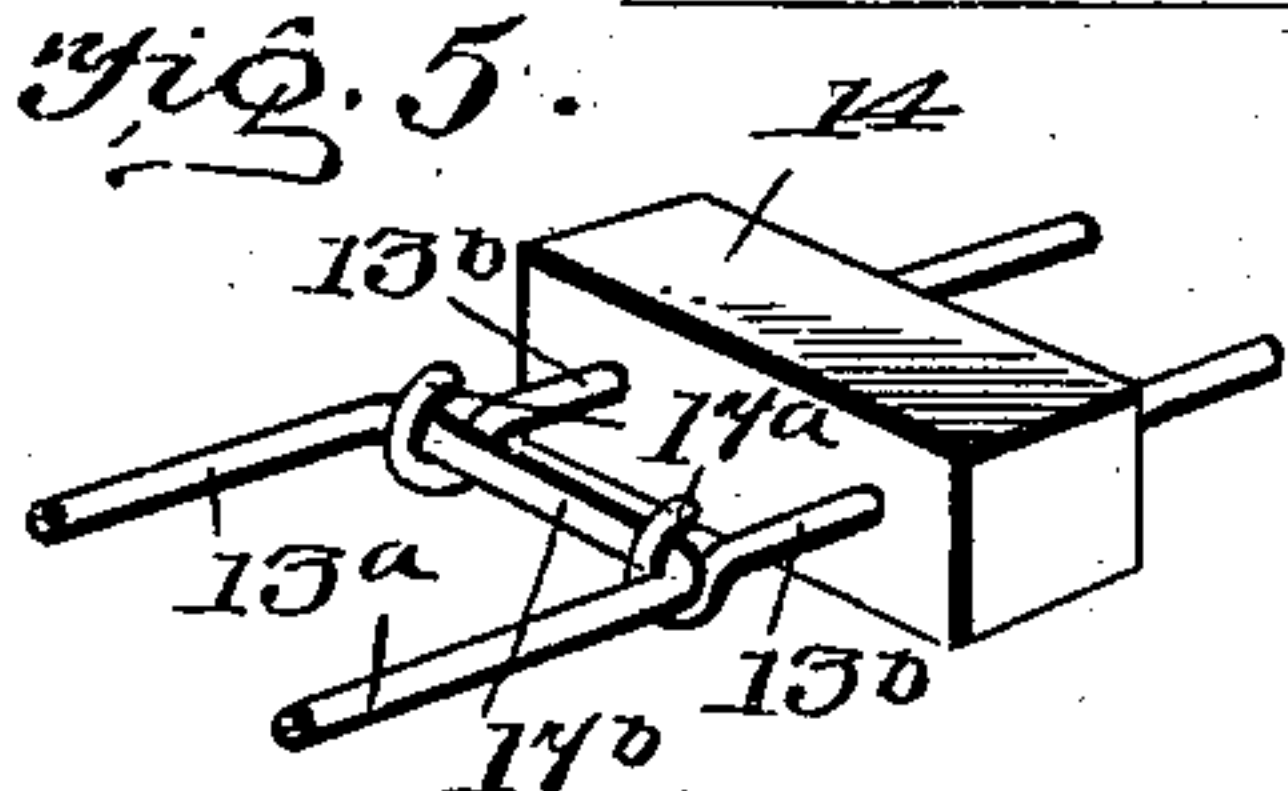
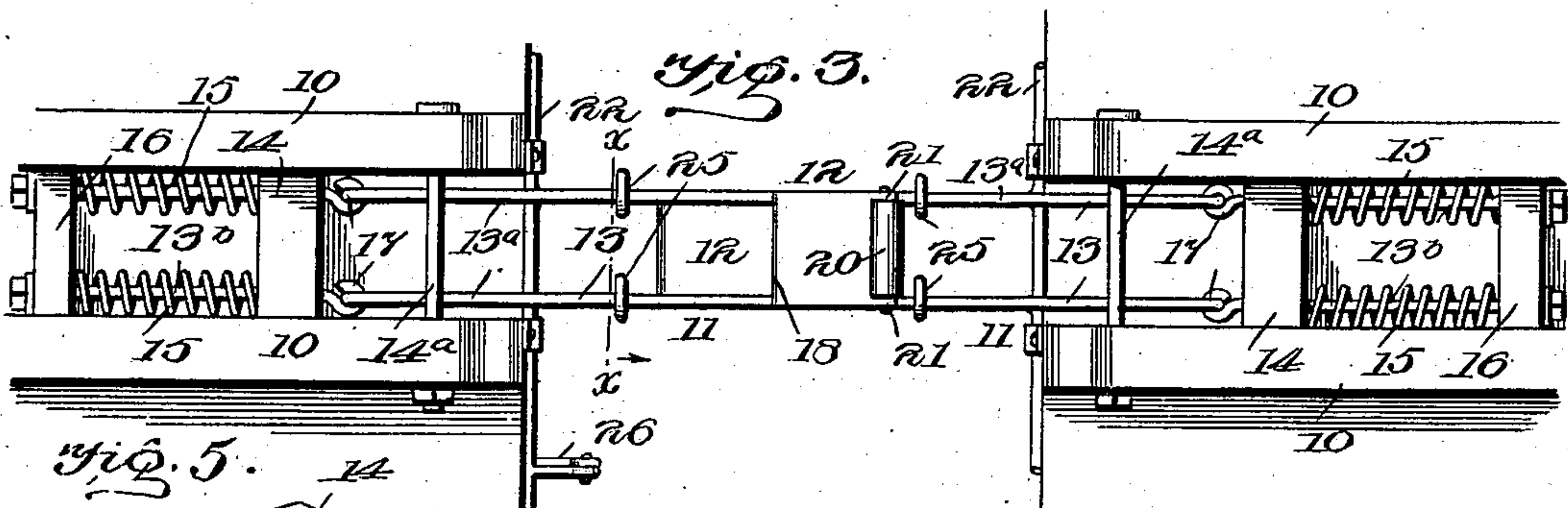
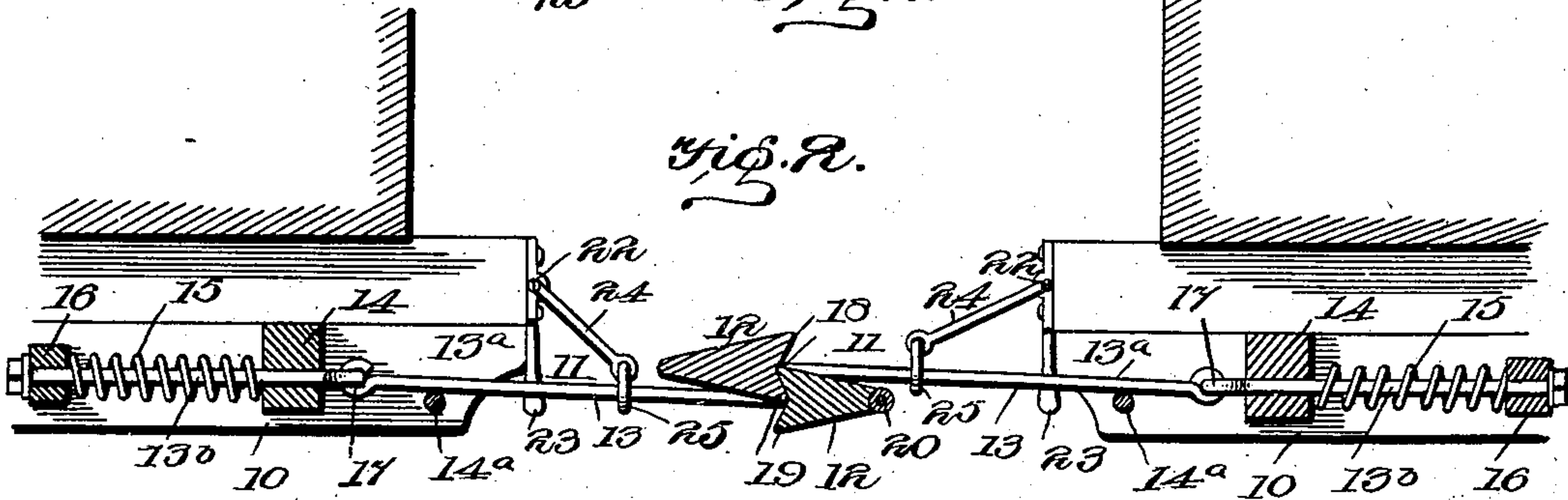
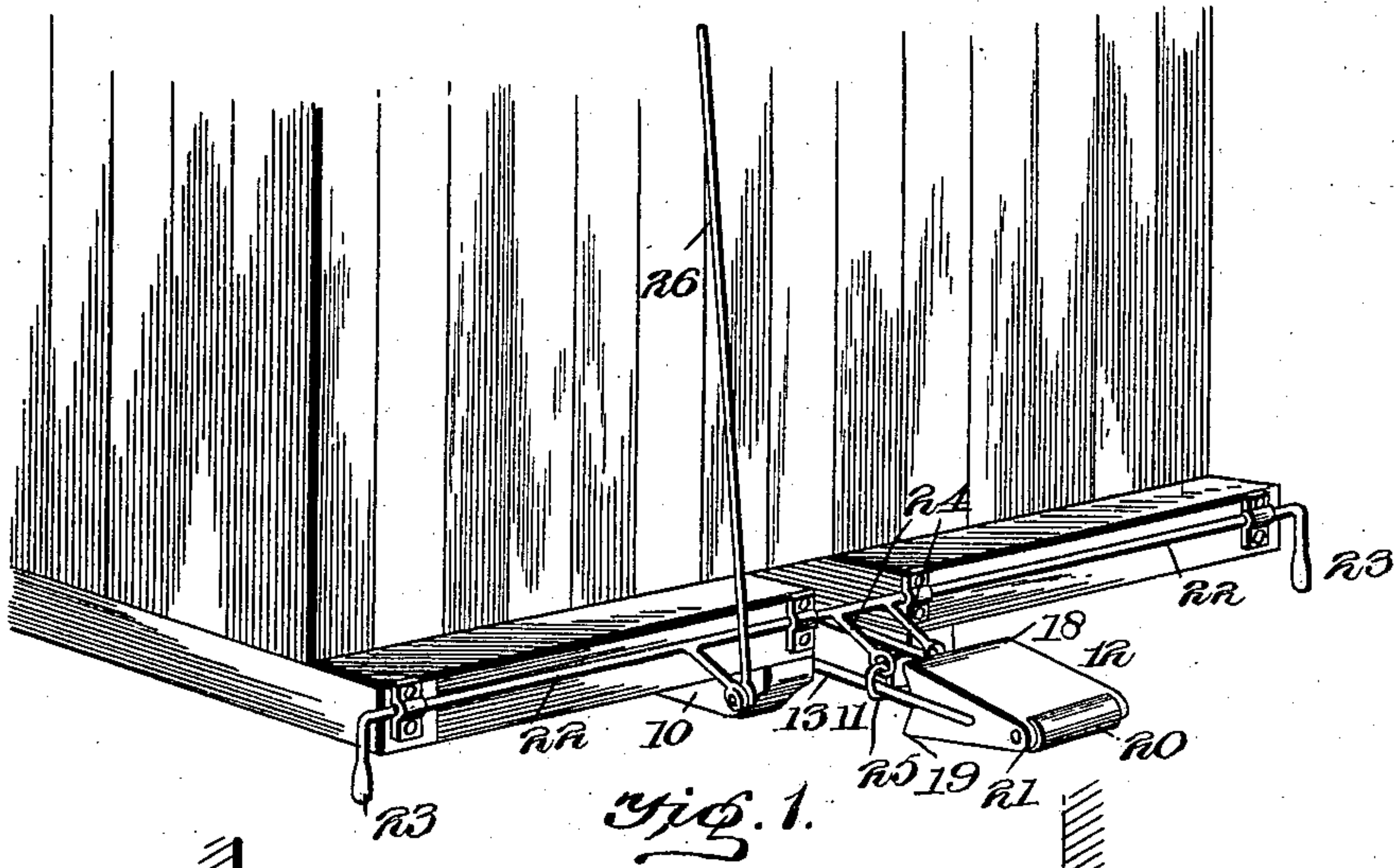
No. 698,740.

Patented Apr. 29, 1902.

R. H. RUTHERFORD.
CAR COUPLING.

(Application filed Feb. 7, 1901.)

(No Model.)



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Witnesses

Feb. 469 - June.
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UNITED STATES PATENT OFFICE.

RICHARD H. RUTHERFORD, OF MARION, OREGON.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 698,740, dated April 29, 1902.

Application filed February 7, 1901. Serial No. 46,385. (No model.)

To all whom it may concern:

Be it known that I, RICHARD H. RUTHERFORD, a citizen of the United States, residing at Marion, in the county of Marion and State of Oregon, have invented a new and useful Car-Coupler, of which the following is a specification.

The present invention relates to improvements in car-couplers; and the object thereof is to provide a coupler which is always in proper position to be automatically coupled and may be uncoupled from either side or from the top of a car.

More particularly, the invention aims to provide arrow-head jaws, which are arranged to interlock; and a further important object is to so construct them that they will have a limited side movement to permit the rounding of curves, and yet will be so interlocked that they must necessarily move in unison and cannot become disengaged during said lateral movement.

To the accomplishment of these objects the construction shown in the accompanying drawings and described in the following specification is preferred; but it will be understood that this construction is open to change and modification within the scope of the appended claims.

In the drawings, Figure 1 is a perspective view of the end of a car, showing one of the improved coupler-heads applied thereto. Fig. 2 is a longitudinal sectional view of two coupler-heads in coacting relation. Fig. 3 is a bottom plan view of the same. Fig. 4 is a detail cross-sectional view taken on the line X X of Fig. 3. Fig. 5 is a detail view illustrating a slightly-modified form of hinge connection between the sections of the draw-bar.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

In carrying out the invention, as shown, the under side of the car is provided with a pair of parallel longitudinally-disposed spaced guide-beams 10. Between these beams 10 is slidably mounted the draw-bar (designated as a whole by the numeral 11) and having at its outer end the coupler-head 12.

The draw-bar 11 comprises a pair of spaced rods 13, each of which is made up of jointed sections 13^a and 13^b. The sections 13^b are

slidably mounted between the guide-beams 10 by being passed through a transverse supporting-beam 14, arranged between said guide-beams and intermediate their ends. Coiled springs 15 are arranged around the inner ends of the sections 13^b, said springs bearing against the inner face of the supporting-beam 14 and a stop-bar 16, which connects the ends of the sections. By this construction it will be seen that the draw-bar is yieldingly held in its inner position, this inward movement being limited by the joints 17 of the rods 13.

The outer sections 13^a of the rods 13 project beyond the end of the car, and to the projecting ends of these sections is secured the coupler-head 12. A transverse rest-bar 14^a is arranged beneath the sections 13^a to limit the downward movement of the same. This coupler-head is in the form of an arrow-head and has the upper and lower barbs 18 and 19 forming retaining-shoulders. The side faces of the head are convexedly rounded, so that its greatest width is at the central portion. The head is arranged between the rod-sections 13^a, which are secured to the widest portion of said head and are preferably inset in the same.

At the front edge of one of the coacting heads is preferably arranged a guiding-roller 20, the outer edge of which is disposed in advance of the edge of the head. The preferred manner of mounting the roller 20 is by cutting away the outer end of the head intermediate its side edges, thus forming the ears 21. The roller 20 is mounted in this cut-away portion and is secured by suitable journals to the ears.

To provide for operating the coupler, a shaft 22 is journaled upon the end of the car and is provided at its opposite ends with depending handles 23. Secured to the shaft directly over each draw-rod 13 is a lever-arm 24, the outer ends of which carry links 25, that surround said rods. A suitable operative connection 26 may be made between the shaft 22 and the top of the car.

The coupling operation will be obvious. When the two cars are brought together, the two jaws will abut and one will ride over the other and drop behind it, so that the respective barbs will become interlocked, as clearly

shown in Fig. 2. At the same time the lower edge of the upper barb will drop between the draft-rods of the lower draw-bar, and likewise the draft-rods of the upper bar will embrace the upper edge of the lower head. To uncouple the cars, it is only necessary to grasp one of the operating-handles 23 or draw upwardly on the connection 26, whereupon the shaft will be rotated, the lower arms 24 raised, and consequently the upper head disengaged from the lower. It will of course be understood that any suitable form of buffer may be used to prevent the cars coming together.

There are certain important advantages for the above-described construction. In the first place by having the roller at the edge of the head the opposite head will be thrown either above or beneath the same by the rotation of said roller. There is small liability, therefore, of the two heads striking on a dead-center; secondly, by having the draft-rods of one draw-bar engaging the sides of the opposite head the two heads are held against relative lateral movement and cannot, therefore, become disengaged through such movement. At the same time sufficient lateral movement is permitted by the hinged sections and by the provision of the independent sections 13^b, each of which has its own spring. For instance, in rounding a curve the greater strain will be brought upon the outer draft-rod. The joint in the other will therefore act as a pivot between its two sections, while the other will be drawn out and its spring compressed, the stop-bar 16 having a loose connection to permit this independent movement.

In Fig. 5 is illustrated a slightly-modified form of hinge connection between the sections of the draw-bar. In this construction the rod-sections 13^b are provided with open hooks 17^a, and the rod-sections 13^a are connected at their inner ends by a cross-rod 17^b, which engages said hooks. This provides a construction which permits the ready disassociation of the sections for the purpose of repair.

From the foregoing it is thought that the construction, operation, and many advantages of the herein-described invention will be apparent to those skilled in the art without further description, and it will be understood that various changes in the size, shape, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

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-bar comprising a plurality of draft-rods, each of said rods consisting of jointed sections, one section of each rod being slidably and yieldingly connected to the car, of a coupler-head secured to the other sections, a rock-shaft mounted upon the car and provided with a plurality of offstanding arms, and sliding connections between the arms and the outer sections of the draw-bar.

2. In a car-coupler, the combination with longitudinally-disposed spaced guide-beams rigidly secured to the under side of the car, of a stationary transverse supporting-beam located between the guide-beams, a plurality of draft-rods passing through said transverse beams, said rods each comprising sections connected by a universal joint, a stop-bar connecting the inner ends of the draft-rods and freely slidable between the guide-beams, springs interposed between and bearing against the stop-bar and the supporting-beam, a coupler-head connected to the outer sections of said draft-rods outside the supporting-beam, and means for supporting said outer sections.

3. In a car-coupler, the combination with a draw-bar comprising a plurality of draft-rods, each of said rods consisting of jointed sections, one section of each rod being slidably and yieldingly connected to the car, of a coupler-head secured to the other sections, a rock-shaft mounted upon the car and provided with a plurality of offstanding arms, and rings surrounding the outer sections of the draw-bar and having pivotal connections with the arms.

4. In a car-coupler, the combination with a draw-bar comprising a plurality of draft-rods, each of said rods consisting of jointed sections, one section of each rod being slidingly and yieldingly connected to the car, the other section being capable of a side and vertical movement, of a coupler-head secured intermediate its upper and lower faces to the outer ends of said rods, said upper and lower faces being narrower in width than the distance between the rods, and adapted to be seated between the corresponding rods of a similar coacting coupler, whereby the head can be moved to one side or the other, but is held against accidental displacement with relation to the coacting head.

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

RICHARD H. RUTHERFORD.

Witnesses:

T. M. WITTEN,
F. C. CURL.