

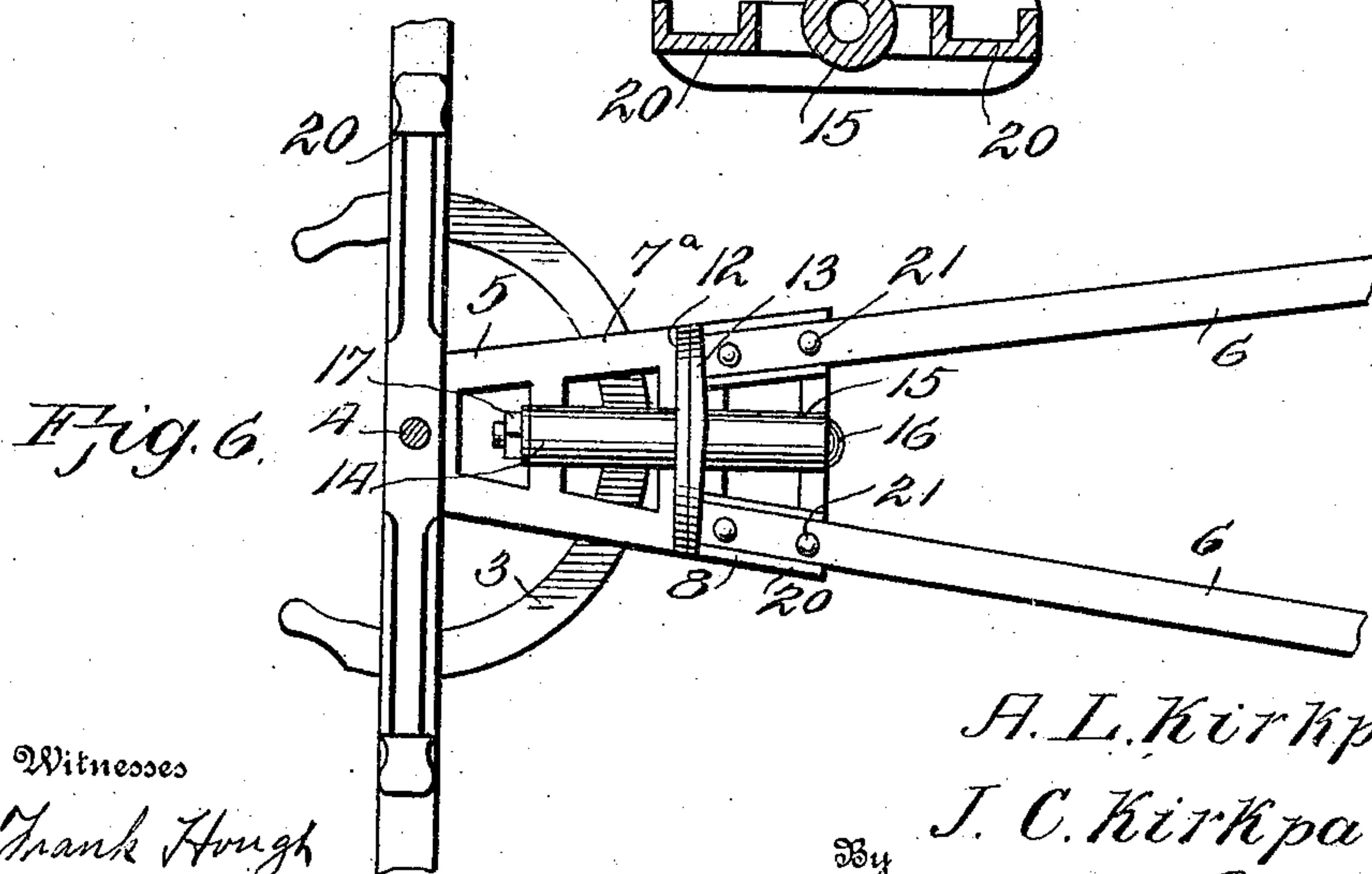
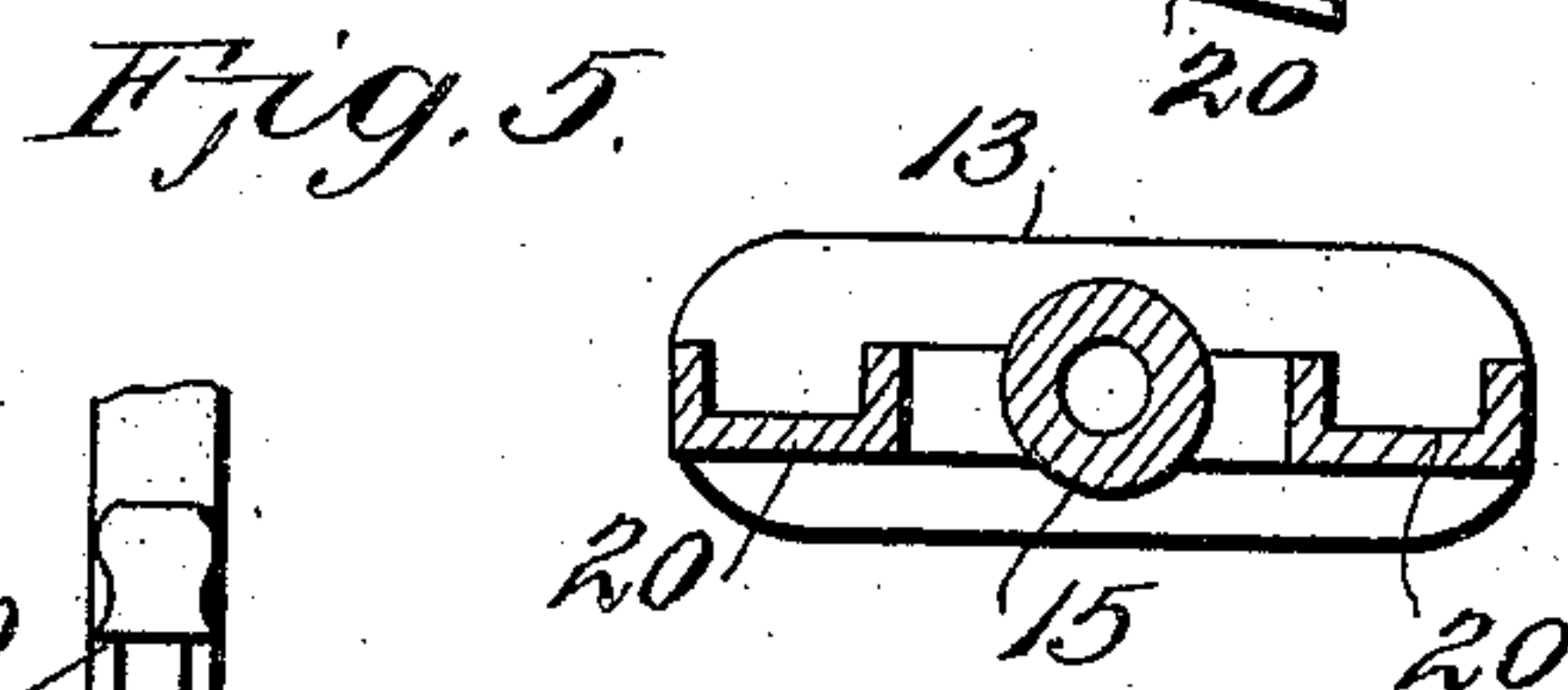
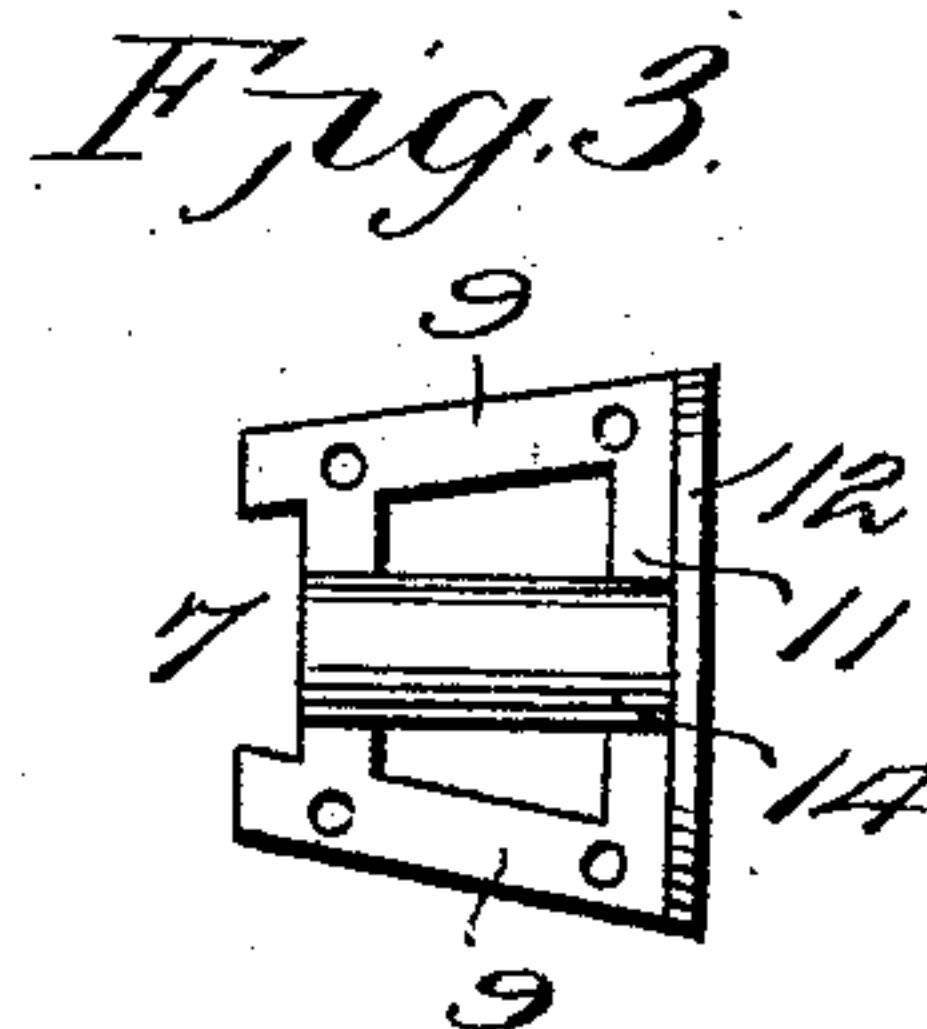
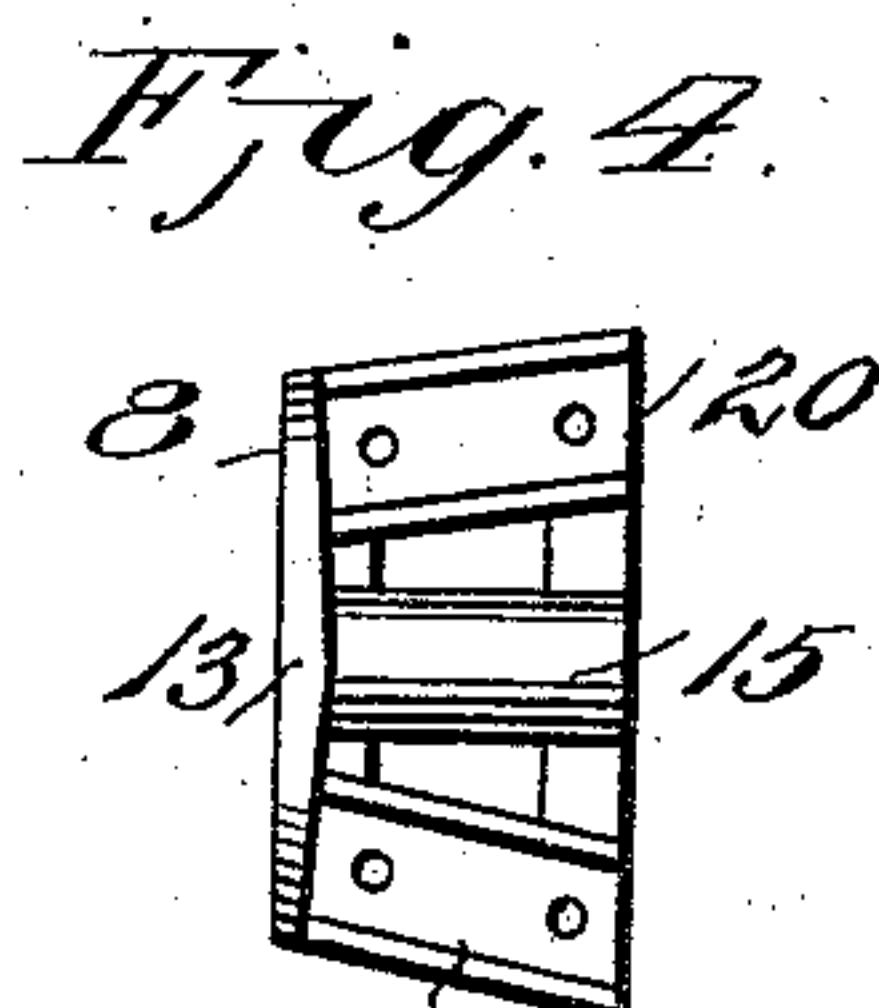
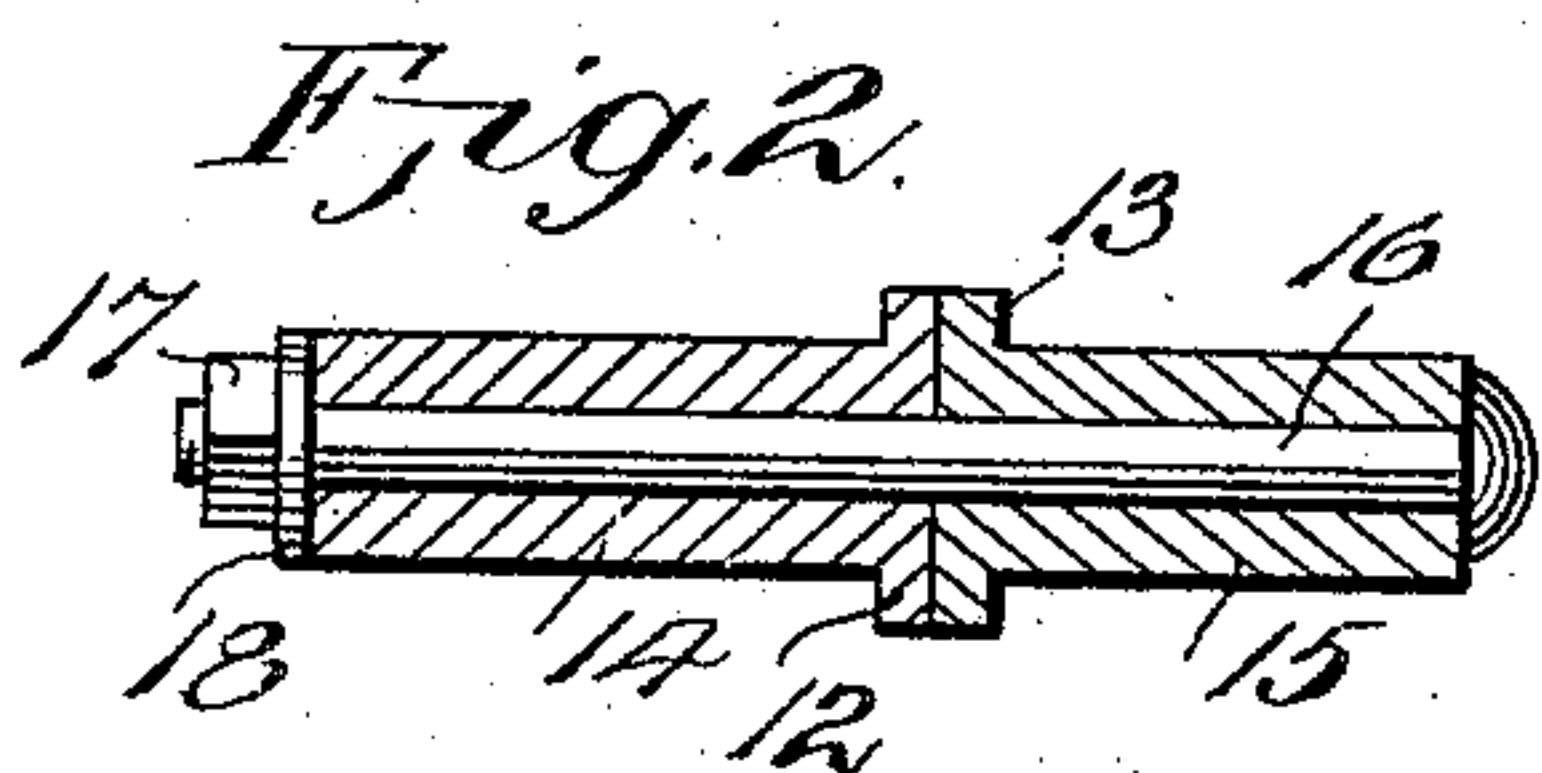
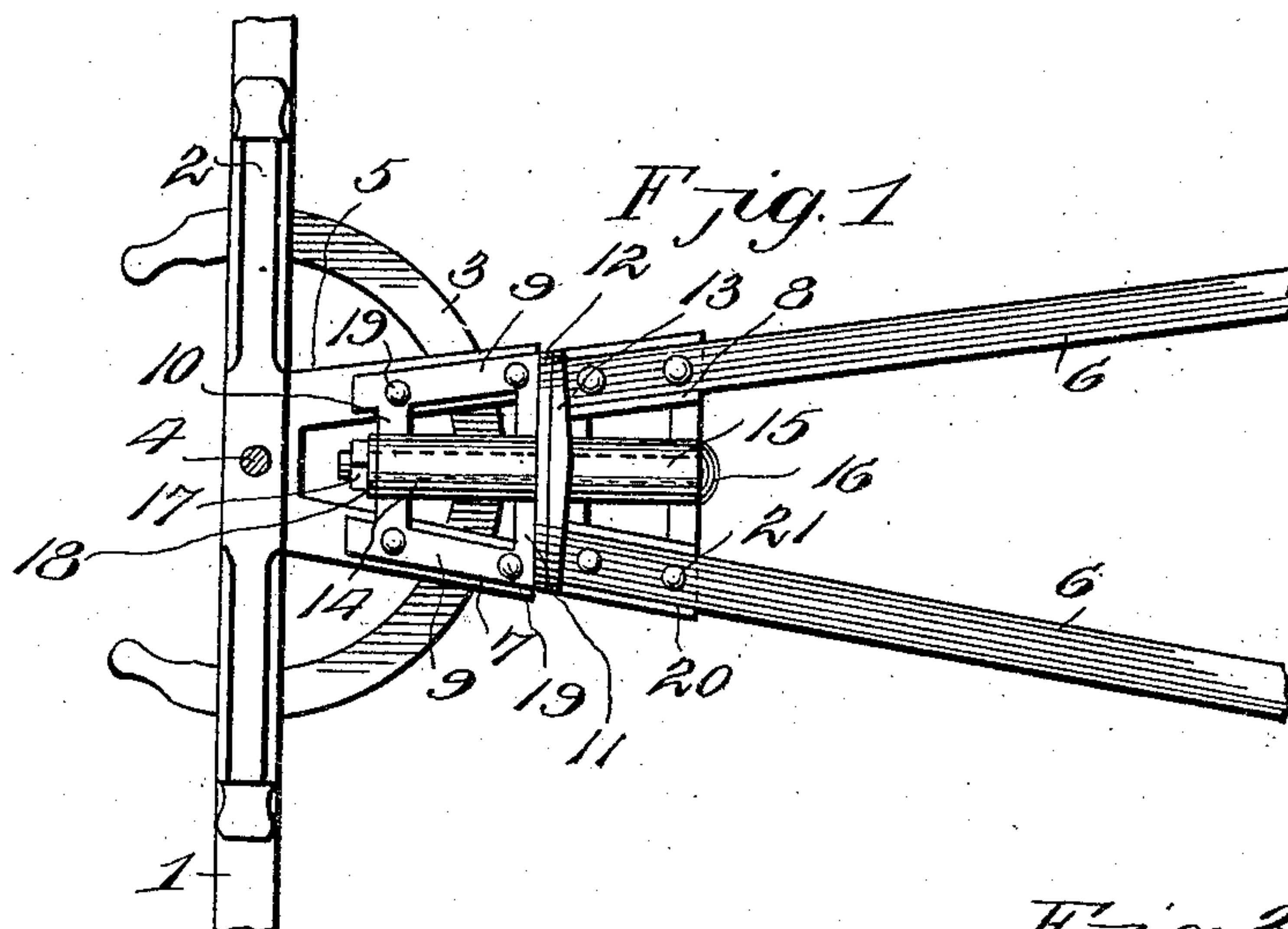
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A. L. & J. C. KIRKPATRICK.

REACH COUPLING.

APPLICATION FILED JAN. 17, 1906.



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# UNITED STATES PATENT OFFICE.

ALEXANDER L. KIRKPATRICK AND JAMES C. KIRKPATRICK, OF HUGO,  
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## REACH-COUPLING.

No. 848,555.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed January 17, 1906. Serial No. 296,529.

*To all whom it may concern:*

Be it known that we, ALEXANDER L. KIRKPATRICK and JAMES C. KIRKPATRICK, citizens of the United States, residing at Hugo, in District 24, Indian Territory, have invented new and useful Improvements in Reach-Couplings, of which the following is a specification.

This invention relates to improvements in reach-couplings or devices for connecting the reaches or perches of vehicles with the stationary members of the fifth-wheels thereof, the invention having for its primary object the production of a novel construction of swivel-coupling to permit the fifth-wheel and front axle and the reach to have relative lateral rotary movement to prevent the twisting strain thrown thereon when the wheels run at different elevations, as when one of the wheels drops into a rut or depression and its companion wheel runs along the level or over elevations in the road-surface, such strain often resulting in the breaking of or damage to the aforesaid parts of the running-gear or tipping over of the vehicle.

Another object is to provide a coupling adapted for single or double reaches and also adapted to permit of the arrangement of the reach above or below the line of the pivotal connection, as well as in line with the pivotal connection, to suit different requirements of service.

In the accompanying drawings, Figure 1 is a top plan view showing a form of coupling for connecting a double reach with the fifth-wheel. Fig. 2 is a vertical longitudinal section of the coupling. Figs. 3 and 4 are top plan views of the front and rear members of the coupling. Fig. 5 is a cross-section through the rear member of the coupling. Fig. 6 is a view similar to Fig. 1, showing a modification.

Referring to the drawings, the numeral 1 designates a vehicle-axle; 2, a head-block; 3, the upper stationary member or circle plate of the fifth-wheel; 4, the king-bolt; 5, a two-armed coupling-bracket pivotally connected with the king-bolt and secured to or formed integral with the circle-plate 3, and 6 convergently-arranged reach-bars as embodied in the double-reach construction disclosed in Fig. 1.

The reach-coupling comprises front and rear members 7 and 8, which are generally of

the same construction, each comprising a pair of arms or side bars 9, connected by cross-pieces or webs 10 and 11, the bars 9 of both members extending forwardly in slightly convergent relation and being formed integral with their respective cross-pieces. The rear cross-piece 11 of the member 7 and the front cross-piece 10 of the member 8 are formed with abutting heads or buffer-plates 12 and 13, which are preferably of elongate form and have straight contactual faces. The members of the coupling are further provided with longitudinally-extending bearing-sleeves 14 and 15, which are integrally connected with their respective cross-pieces and heads and are arranged in axial alinement. Through these bearing-sleeves extends a spindle or bolt 16; the headed end of which is shown in the present instance as bearing against the rear end of the sleeve 15, while the forward end of the shank thereof projects beyond the front end of the sleeve 14 and is threaded for the reception of a nut 17, bearing against a washer 18 and serving to hold the members of the coupling in coupled relation. The bolt pivotally connects the two members of the coupling so as to permit the same to have lateral rotary movement, as will be readily understood.

The arms 9 of the front coupling member 7 are pierced for the passage of bolts or other analogous fastenings 19 to secure the same to the arms of the coupling-bracket 5, while the corresponding arms of the rear coupling member 8 are grooved or channeled on one side, as indicated at 20, to receive the forward ends of the reach-bars 6 and are pierced for the reception of bolts 21, fastening the reach-bars thereto. By this construction the bolted ends of the bars are held from shifting and a strong and durable connection between the rear coupling member and bars provided.

It will be seen as a result of the construction described that while free swinging movement of the front axle and upper circle plate 3 is permitted in the usual way a swivel-coupling between the same and reach-bars is produced which will permit the front axle and parts applied thereto and the reach-bars to have independent lateral rotary movement to adapt the same to readily conform to variations in the positions of the wheels of the vehicle in traveling over irregular surfaces and that when the wheels are traveling at dif-



different elevations in the road-surface the requisite amount of play between the aforesaid parts of the running-gear is permitted to avoid the twisting strain ordinarily produced and to thereby obviate liability of breakage of any of these parts or of tipping of the vehicle under such strain. It will also be apparent that the abutting or bumper heads 12 and 13 will reduce to a minimum shocks or jars produced upon bringing the vehicle to a sudden stop, thus relieving the reach-bars from a considerable portion of the longitudinal strain imposed upon them by the sudden arrest of motion of the vehicle and objectionable rear pressure or shocks upon the king-bolt when the weight of the vehicle-body and its load is thrown forward, as in descending grade.

The grooved or channeled portions 20 of the arms of the coupling members are of less depth than the reach-bars, so that the bars when applied thereto will have their longitudinal centers or axes on a direct line with the plane of the pivot-bolt 16 when the grooved faces of the bars face upwardly, as shown in Fig. 1; but by reversing the rear coupling member or adjusting it so that the grooved faces will face downward the longitudinal centers or axes of the reach-bars may be brought to lie above the plane of the pivot-bolt, and, vice versa, by reversing the front coupling to face down while the rear coupling faces upward to vary the line of imposed longitudinal strain between the parts to suit the varying conditions in the arrangement of the parts of the fifth-wheel to make the line of draft high or low or in a direct line, as may be deemed advisable or circumstances may require in order to couple the parts to the

best advantage in the way of securing strength and durability.

In Fig. 6 the construction of the rear member of the coupling is the same as that shown in Fig. 1, except that the front member 7<sup>a</sup> is in this instance cast integral with the stationary member 3 of the fifth-wheel, a construction which may be employed, if desired.

The advantages of our reach-coupling will be readily understood by those versed in the art without further description, and it will be manifest that while the device is simple of construction and inexpensive of production it may be employed in connection with the running-gear of vehicles now in general use without modifying the construction of the latter in any particular.

Having thus described the invention, what we claim is—

A reach-coupling comprising front and rear sections, each formed of a pair of spaced arms, a longitudinal bearing-sleeve, front and rear webs or cross-pieces integral with said arms and bearing-sleeves, the rear cross-piece of the front member and the front cross-piece of the rear member being formed with an abutting head, and the side arms of the rear member being channeled or provided with reach-bar-receiving grooves, and a bolt passing through the sleeves and pivotally connecting said members.

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

ALEXANDER L. KIRKPATRICK.  
JAMES C. KIRKPATRICK.

Witnesses:

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