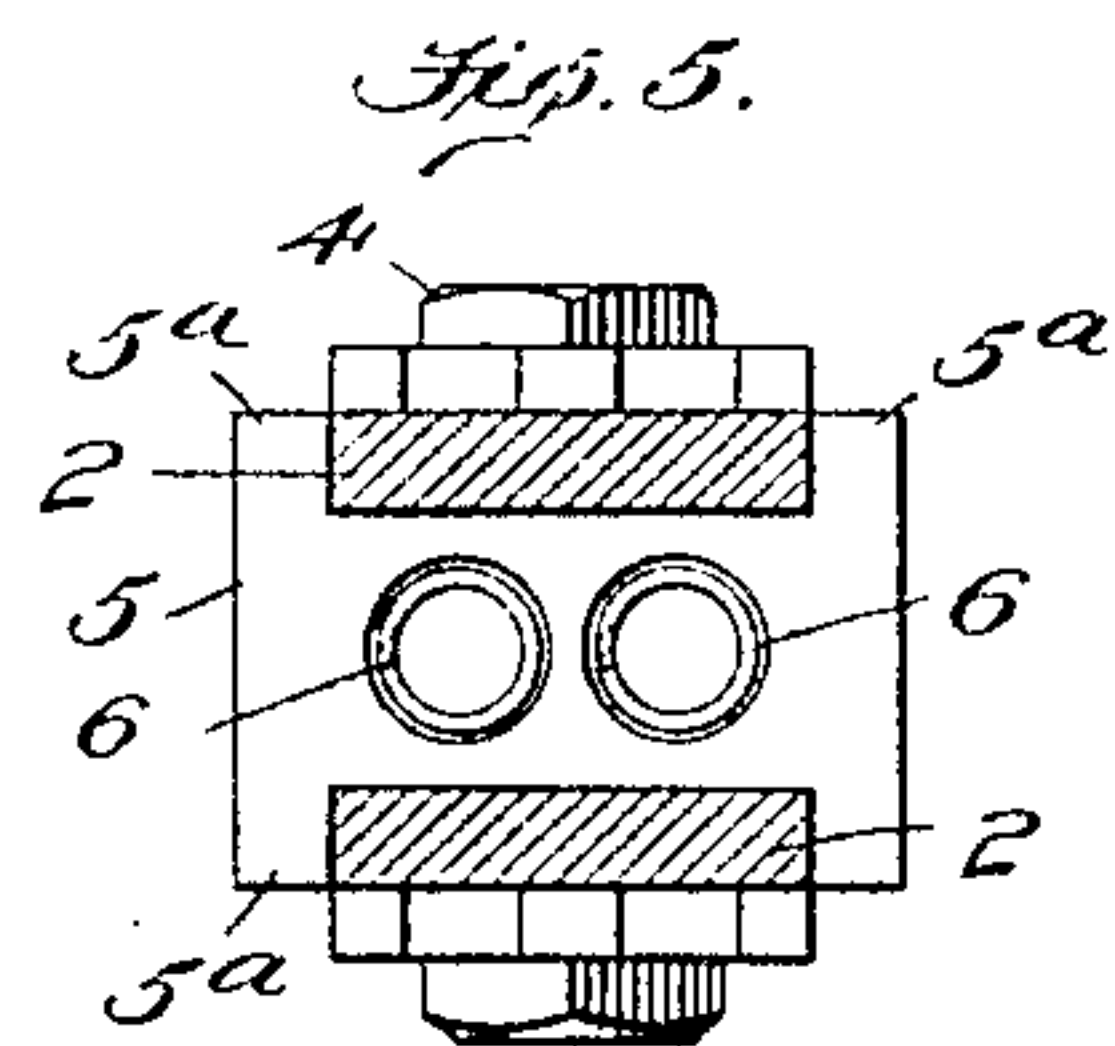
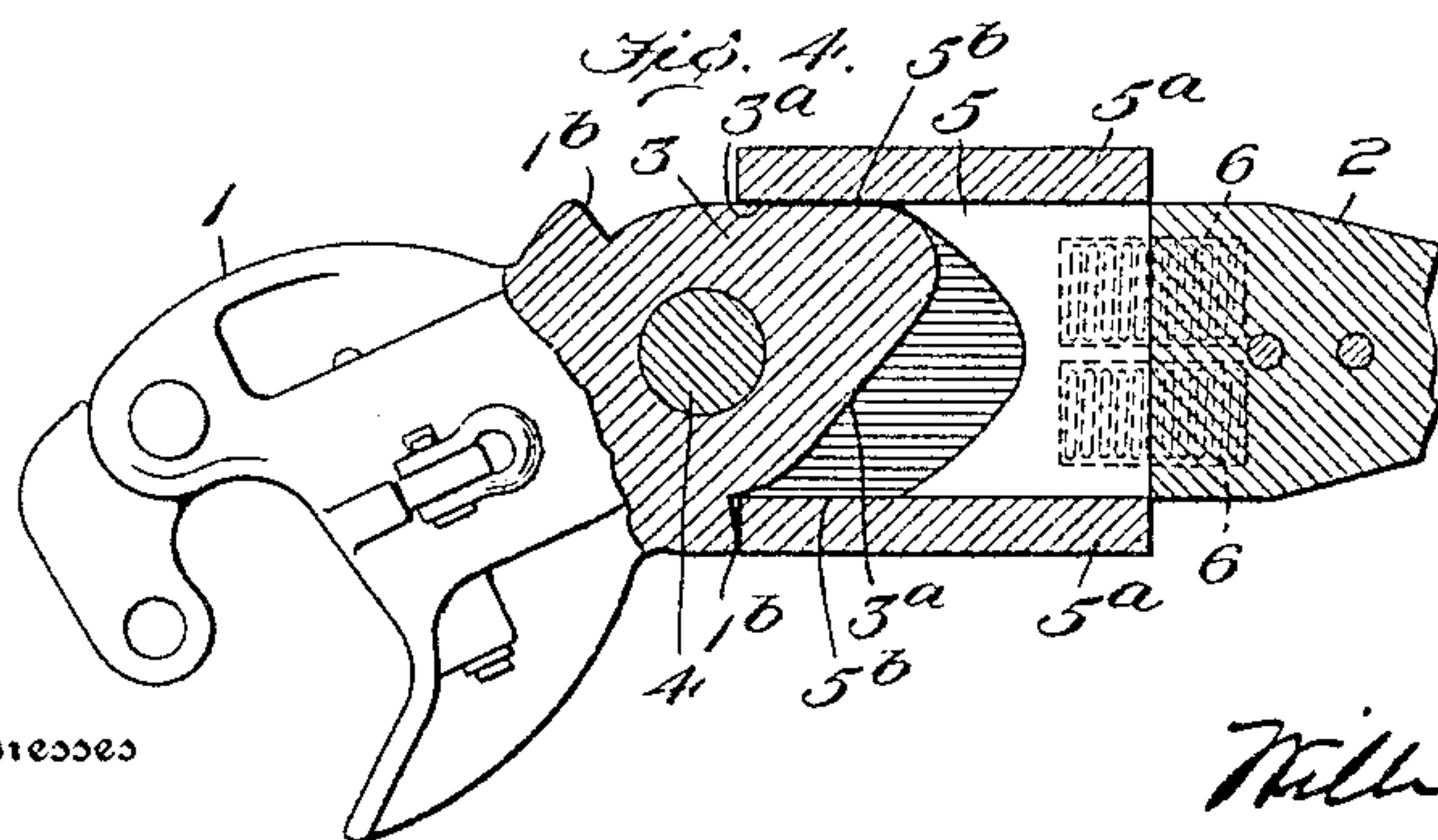
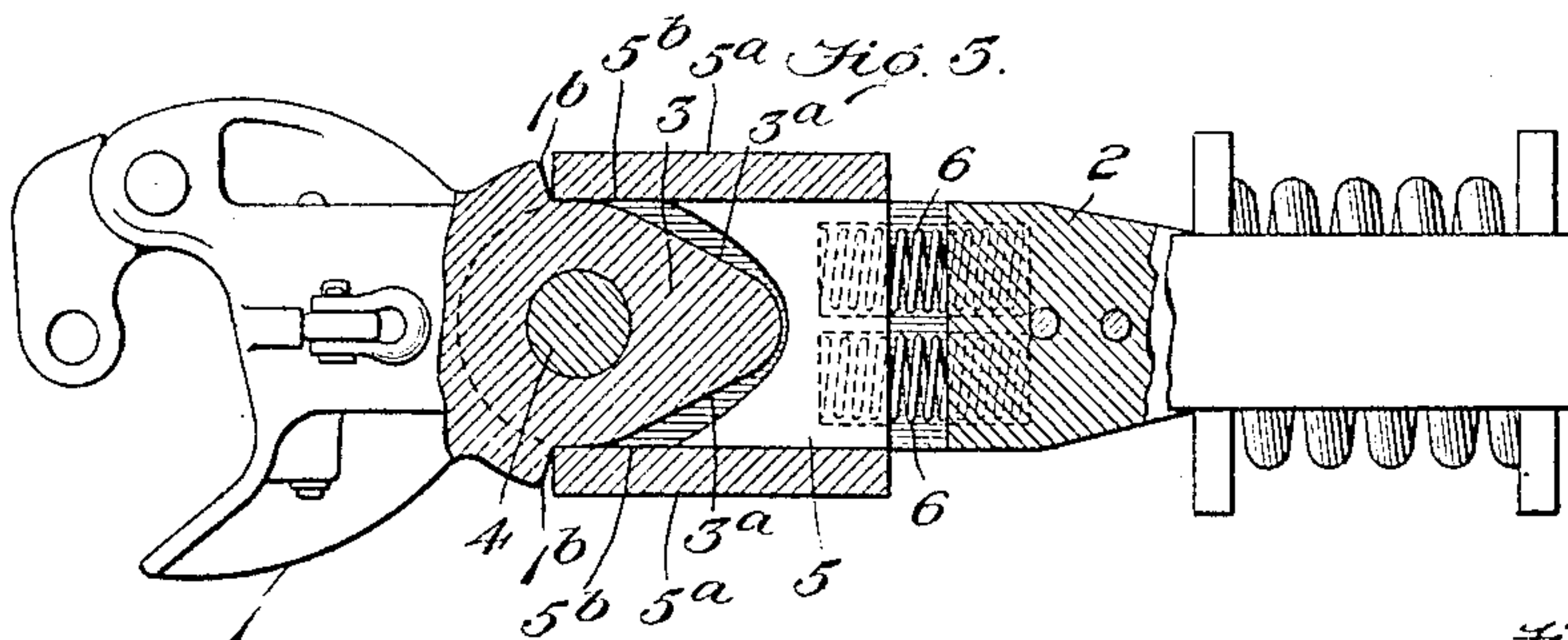
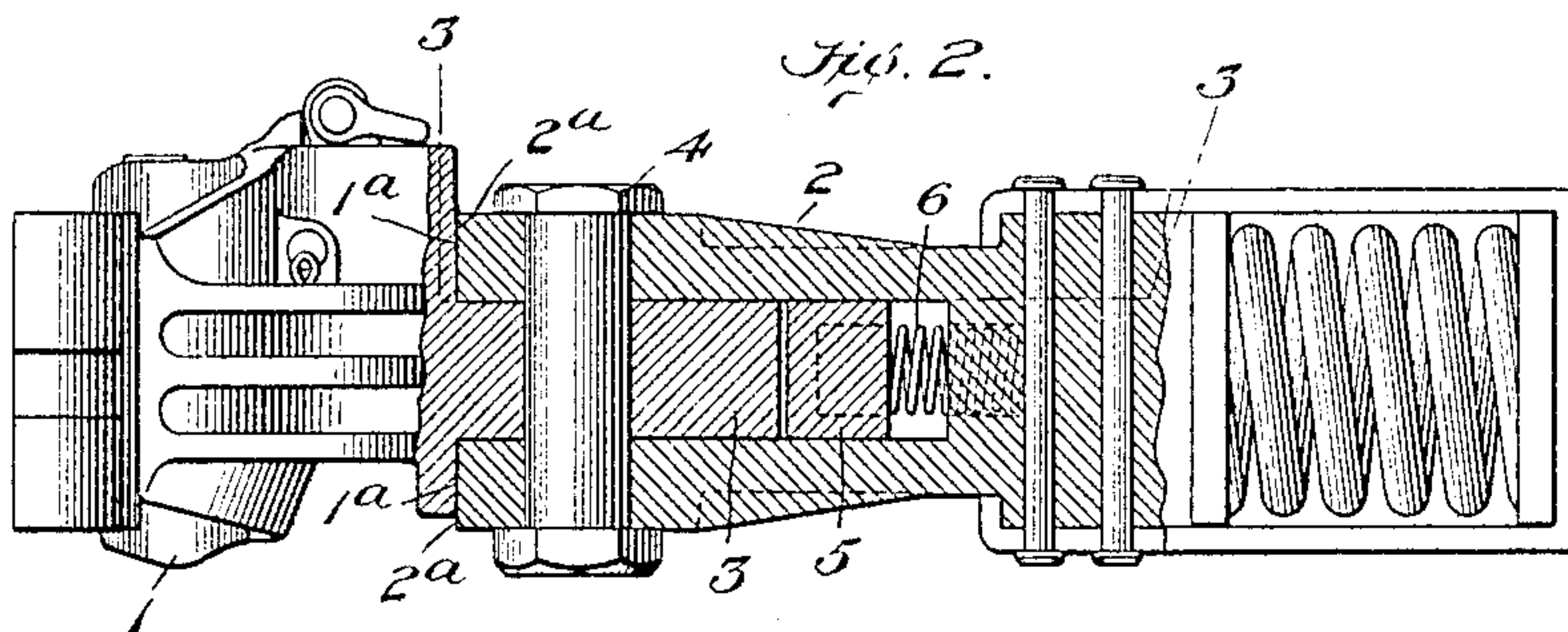
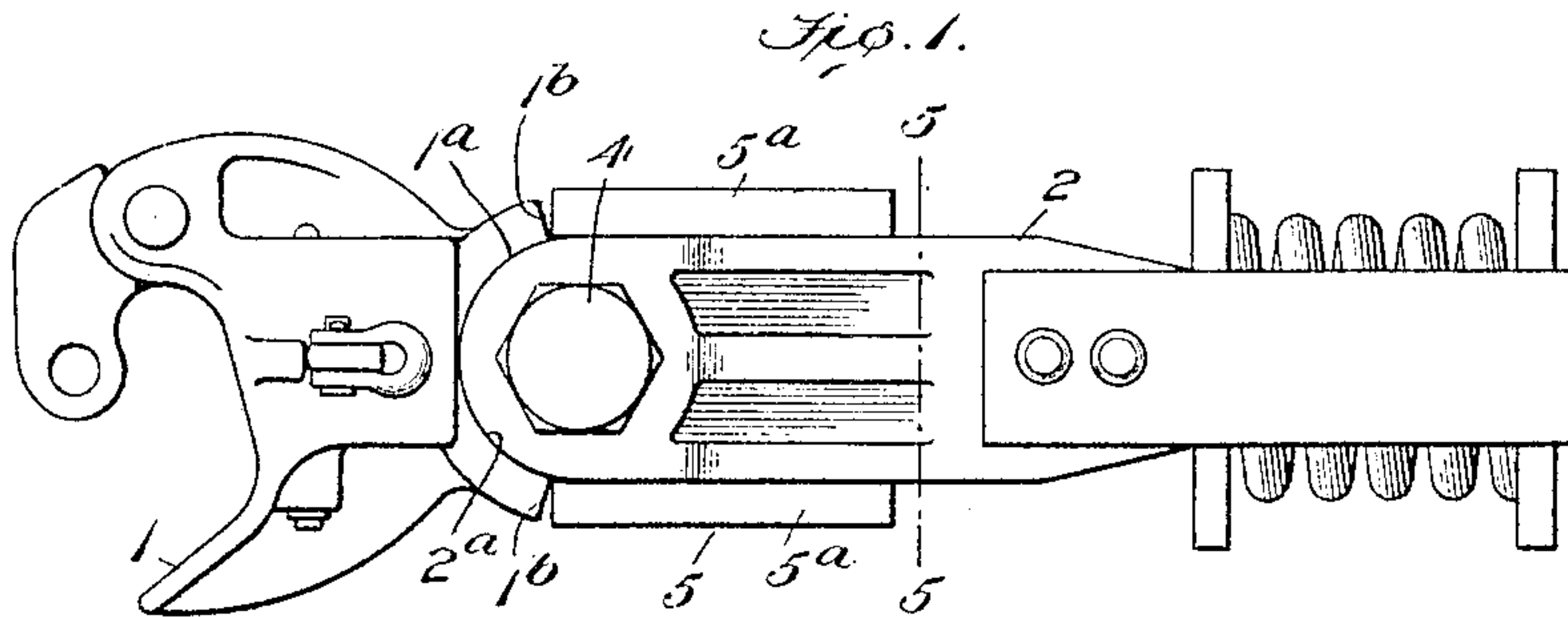


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CAR COUPLING.  
APPLICATION FILED MAY 16, 1908.

904,712.

Patented Nov. 24, 1908.



Inventor

Witnesses

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# UNITED STATES PATENT OFFICE.

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## CAR-COUPLING.

No. 904,712.

Specification of Letters Patent.

Patented Nov. 24, 1908.

Application filed May 16, 1908. Serial No. 433,284.

*To all whom it may concern:*

Be it known that I, WILLIAM McCONWAY, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Car-Couplers; and I do hereby 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.

My invention relates to the construction of draft appliances for railway cars and particularly to that class of car couplers in which the coupler head is pivotally or movably mounted upon the coupler stem or corresponding supporting member.

The object of my invention is to provide a simple, compact and durable device in which the coupler head is capable of a yieldingly resisted lateral or swinging movement with respect to the coupler stem or similar part, the arrangement and combination of elements being such that the coupler head is normally maintained in, and constantly tends to assume, a centralized position. As the laterally movable coupler head permits the car to which the coupler is attached to pass around very sharp curves without the least difficulty, and as my invention affords a compact construction in which the dimensions over all of the stem and head are the same as the dimensions of the corresponding parts of the rigid freight car couplers now in use, a car coupler constructed in accordance with my invention may be readily applied to freight cars with special advantage, as such cars are usually subjected to a large amount of switching involving the passage around short, sharp curves.

In the drawings chosen for the purpose of illustrating my invention, the scope whereof is pointed out in the claims, Figure 1 is a plan view of a car coupler embodying my invention shown in connection with the usual yoke, draft spring and followers, the coupler head being in its normal or central position; Fig. 2 is a view partly in vertical central section and partly in side elevation of the coupler illustrated in Fig. 1; Fig. 3 is a horizontal section of the coupler taken on the line 3—3, Fig. 2; Fig. 4 is a view corresponding to Fig. 3, but illustrating the relative positions of the several parts of the de-

vice when the coupler head is at the extreme limit of its lateral movement; and, Fig. 5 is a vertical transverse section taken on the line 5—5, Fig. 1.

Like symbols refer to like parts wherever they occur.

I will now proceed to describe my invention more fully so that others skilled in the art to which it appertains may apply the same.

In the particular application of my invention illustrated in the drawings, the coupler head 1, which may be of any desired construction in so far as its knuckle and locking mechanism are concerned, is attached to the coupler stem 2 in a manner which permits these two members to vary their angular relation with respect to each other. For this purpose the rear portion of the coupler head is preferably formed with a perforated connecting lug 3 that is adapted to be received in and vertically supported by the bifurcated forward end of the coupler stem 2, said coupler stem being likewise provided with perforations for the reception of the pivot bolt 4 which passes through the said connecting lug.

The upper and lower branches of the bifurcated end of the coupler stem are formed with curved bearing faces 2<sup>a</sup> which are concentric with the openings for the pivot pin 4. These bearing faces engage the correspondingly curved bearing faces 1<sup>a</sup> with which the coupler head 1 is provided, said bearing faces 1<sup>a</sup> preferably extending continuously from the slide-actuating face or shoulder 1<sup>b</sup> formed on one side of the coupler head to the similar face or shoulder 1<sup>b</sup> formed on the opposite side of said head. Such a construction, while permitting a pivotal movement of the coupler head upon the stem, relieves the connecting pivot bolt 4 from all buffing shocks, affords an extended bearing between the coupler head and coupler stem to thus assist in preventing sagging of the head, and results in the provision of simple and effective means for actuating as well as guiding the centering slide 5, as will hereafter more fully appear.

Mounted between the branches of the bifurcated portion of the coupler stem 2 is a centering slide 5 which is yieldingly supported by one or more centering springs 6 that are interposed between said coupler



stem and the rear end of the member 5, said centering springs 6 being preferably given an initial compression when the device is assembled in order to insure positive and efficient centering of the coupler head and to take up whatever wear may result from service. The centering slide is preferably formed with upper and lower guide flanges 5<sup>a</sup> which engage the vertical longitudinal faces of the forked end of the coupler stem 2, the body portion of said slide being shaped to generally conform to the configuration of the connecting lug 3 and to permit said lug, when the coupler head 1 is displaced laterally, to turn until one or the other of the plane converging stop faces 3<sup>a</sup> of the said lug 3 comes into engagement with its respective limit face 5<sup>b</sup> of the centering slide 5. The limit faces 5<sup>b</sup> of the member 5 are preferably disposed parallel to each other and in the planes of the vertical outer faces of the forward end of the coupler stem.

The illustrated construction and arrangement of the yoke, draft spring and followers, which together constitute the devices for resisting the draft and buffing forces transmitted by the coupler, are well known and operate in the usual manner.

The device may be assembled by first placing the centering springs 6 in their seats in the coupler stem 2, next inserting the centering slide 5 in the bifurcated end of the coupler stem, then inserting the connecting lug 3 of the coupler head between the branches of the bifurcated end of the stem 2, and, finally, passing the pivot bolt 4 through the perforations in the coupler stem 2 and connecting lug 3.

The construction being such as hereinbefore pointed out the operation of the device will be as follows. Assuming the coupler head 1 to be in its normal or centralized position, when, it will be noted, the centering slide 5 occupies its extreme forward position in contact with both of the slide actuating faces or shoulders 1<sup>b</sup> of the coupler head, a lateral displacement of said head about its pivot pin 4 causes one or the other of the slide actuating shoulders 1<sup>b</sup>, depending upon the direction in which the coupler head is displaced, to force the centering slide 5 rearwardly, thus compressing the centering springs 6. When the force which caused the lateral displacement of the coupler head is withdrawn, the expansion of the springs 6 returns the centering slide 5 to its normal position, thus also returning the coupler head 1 to its centralized position. As the centralization of the coupler head is effected independently of the usual draft spring it will be noted that the full capacity of such draft spring is always available to resist draft and buffing forces.

The extent of the lateral swinging motion

of the coupler head may, if desired, be wholly controlled by the amount of rearward motion which the centering slide is permitted to have before being checked by the coupler stem 2, or it may be entirely controlled by the engagement of the stop faces 3<sup>a</sup> formed on the connecting lug 3 with their respective limit faces 5<sup>b</sup> of the centering slide; but it is preferred to so proportion the parts that both means of limiting the lateral movement of the coupler head will be simultaneously available. In addition to performing the function of limiting the lateral movement of the coupler head, it will be observed that the stop and limit faces, 3<sup>a</sup> and 5<sup>b</sup>, respectively, by engaging each other, relieve the pivot pin 4 of all or substantially all shearing forces when the coupler head reaches either of its extreme lateral positions.

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

1. In a device of the character indicated, the combination with a coupler stem, of a coupler head which is movably mounted upon said stem so that it may be displaced in opposite directions from its centralized position, a spring member which operates to normally maintain said coupler head in a centralized position, said spring member being compressible in the direction of length of the coupler stem without lateral displacement and being unaffected by longitudinal movement of said stem, and means whereby said spring member is energized when the coupler head is displaced in either direction from its centralized position.

2. In a device of the character indicated, the combination with a coupler stem, of a coupler head which is movably mounted upon said stem so that it may be displaced in opposite directions from its centralized position, a centering slide which is mounted to reciprocate longitudinally upon said stem, a spring member interposed between said slide and stem, said spring member being unaffected by draft and buffing forces, and means whereby said slide is actuated when the coupler head is displaced in either direction from its centralized position.

3. In a device of the character indicated, the combination with a bifurcated coupler stem, of a centering slide which is slidably mounted in the bifurcated portion of said stem, a spring member interposed between said slide and said stem, and a coupler head which is pivotally mounted upon said stem, said coupler head having a connecting lug which by engaging said slide is adapted to limit the lateral movement of said head.

4. In a device of the character indicated, the combination with a coupler stem, of a centering slide which is mounted to reciprocate upon said stem, a spring member for



actuating said slide, and a coupler head pivotally connected to said stem, said centering slide operating to limit the lateral movement of said head.

- 5 5. In a device of the character indicated, the combination with a coupler stem, of a reciprocatory centering slide which is provided with guides engaging said stem, a  
10 and said stem for yieldingly supporting said slide, said spring member being unaffected by longitudinal movement of said stem, a

coupler head which is pivotally mounted upon said stem, and means whereby said slide is actuated when the coupler head is 15 displaced in either direction from its centralized position.

In testimony whereof I affix my signature, in presence of two subscribing witnesses.

WILLIAM McCONWAY.

Witnesses:

J. W. HARTLEY,  
F. D. ECKER.