Aug. 8, 1933. R. H. THOMPSON 1,921,141

STEERING MECHANISM

Filed Jan. 29, 1932

Fig. 1.

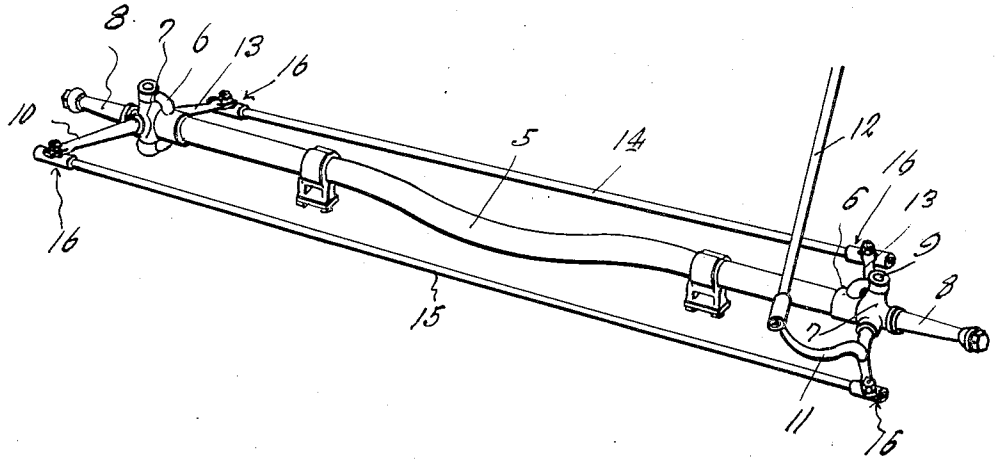
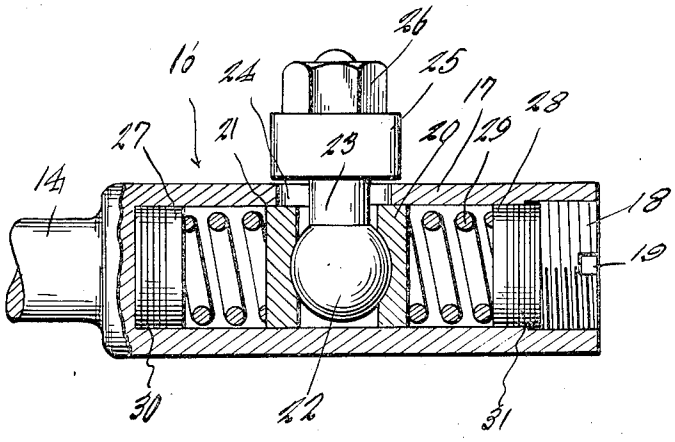


Fig. 2.



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STEERING MECHANISM

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1 Claim. (Cl. 280—95)

This invention appertains to new and useful improvements in steering mechanisms, and more particularly to a novel equalized steering control wherein auxiliary means is employed to prevent shimmying of the steering wheel and also to eliminate twisting and consequent snapping of the steering mechanism tie rods as on vehicles wherein the steerable wheels are equipped with brakes, this condition being extremely prevalent on present day vehicles of the four wheel brake type.

Another important object of the invention is to provide an improved steering mechanism which while being a safety factor, will not materially increase the cost of steering mechanisms, and furthermore, will be substantially fool-proof in operation and easy to establish and install as replacement equipment on present-day vehicles.

Other important objects and advantages of the invention will become apparent to the reader of the following specification.

In the drawing:—

Figure 1 represents a perspective view of that portion of the mechanism improved and associated with the front axle.

Fig. 2 represents an enlarged fragmentary detailed sectional view of one of the cushioning units.

Referring to the drawing wherein like numerals designate like parts, it can be seen that numeral 5 generally refers to the front axle bar having the yokes 6 at the ends thereof in which the knuckles 7 carrying the stub axle 8 are swingable on the pins 9.

Ordinarily, each of these knuckles 7 is provided with a single rearwardly disposed arm 10, one of which is connected to the member 11 which leads by way of the rod 12 to the steering wheel shaft.

However, in the present case, each of the knuckles 7 is provided with a forwardly extending arm 13 in addition to its rearwardly extending arm 10 and interposed between the forwardly extending arms 13—13, is the tie rod 14 while interposed between the rearwardly extending knuckle arms 10—10 is the tie rod 15.

The tie rods 14 and 15 are connected at their ends to the arms 13 and 10 respectively, by cushioning units generally referred to by numeral 16.

More in detail, it can be seen in Fig. 2, that each end of each of the rods 14 or 15 is provided with a barrel extension 17 provided with internal threads at its end portions for receiving a threaded plug 18, having a screw driver slot 19 therein.

Slidable in each barrel 17 is a pair of follower plates 20—21, the same being provided on their opposed faces with concavities to receive opposite side portions of the ball 22 which is equipped with a shank 23 extending upwardly through the opening 24 in the upper portion of the barrel extension 17 to engage through an opening in the free end portion of the corresponding knuckle arm 25.

The upper end of the shank 23 is reduced and threaded to be received by a nut 26. Supplemental followers or disks 27—28 are slidably disposed in the barrel extension 17 outwardly from the followers 20—21. Interposed between the follower 20 and the disk 28 and also interposed between the follower 21 and the disk 27 is a compressible coiled spring 29. Interposed between the disk 27 and the inner end of the barrel 17 are the shims 30, while between the disk 28 and the plug 18 are the shims 31.

Obviously, the shims 30 and 31 can be removed or replaced to the extent desired in properly setting the tie rods 14 and 15 with respect to the knuckles 7, this affording means for not only taking up wear, but also affording cushioning means for eliminating shimmy action which is recognized as hazardous to the welfare of motorists.

While the foregoing specification sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

Having thus described my invention, what I claim as new is:—

In a steering mechanism, a pair of steerable stub axles, a pair of arms on each axle extending forwardly and rearwardly therefrom, a pair of tie rods for the front and rear arms, each of said tie rods having sockets at the ends thereof, balls on the outer ends of the arms slidable in the corresponding sockets and a pair of springs in each socket at opposite sides of the corresponding ball.

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