June 5, 1923. 1,457,975

J. HOFFMAN

STEERING STABILIZING DEVICE

Filed April 11, 1922

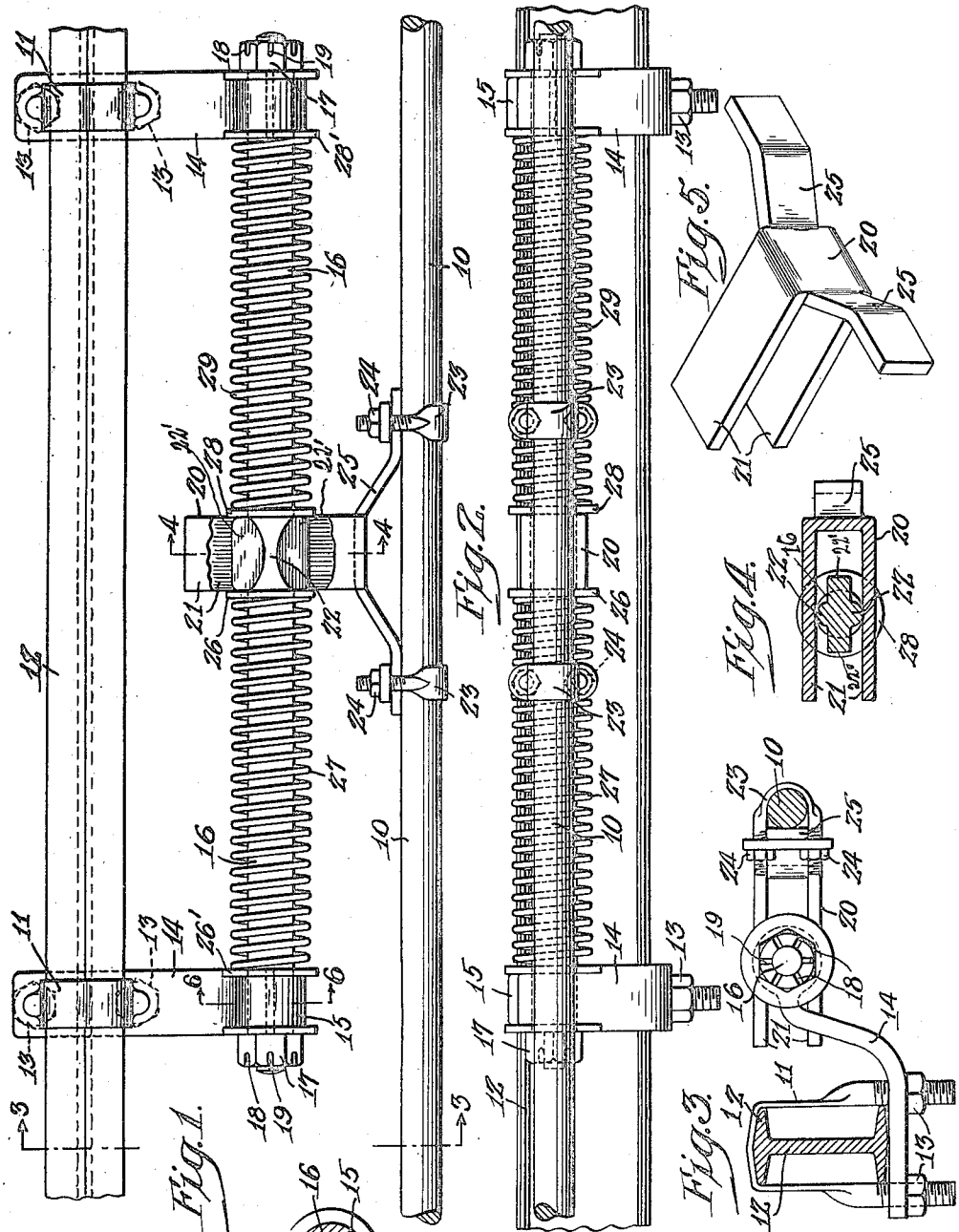


Fig. 1.

Fig. 2.

Fig. 5.

Fig. 4.

Fig. 3.

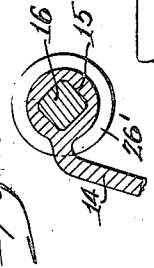


Fig. 6.

Witness:
Walter Chum

Inventor:
Joseph Hoffman
by M. Van Loostrum
his Attorney.

Patented June 5, 1923. 1,457,975

UNITED STATES PATENT OFFICE.

JOSEPH HOFFMAN, OF PHILADELPHIA, PENNSYLVANIA.

STEERING STABILIZING DEVICE.

Application filed April 11, 1922. Serial No. 551,703.

To all whom it may concern:

Be it known that JOSEPH HOFFMAN, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, has invented certain new and useful Improvements in Steering Stabilizing Devices, of which the following is a specification.

My invention relates to an attachment for the steering mechanism for vehicles of the self propelling type and has reference more particularly to means tending to stabilize the steering mechanism in neutral position.

An object of the invention is to provide a simple, strong and inexpensive device which will not require any alteration in the steering mechanism of a self propelling vehicle when applied thereto, and which contrivance can be easily and quickly attached to the steering mechanism.

Another object of the invention is to provide an attachment of the class described which will reduce the shocks on the steering wheel and which will automatically restore the steering mechanism to neutral position.

The greater proportion of automobile driving is done in direct and approximately straight lines straight ahead. The slightest inattention upon the part of the driver may result in the front wheels swerving or "jack-knifing," which often results in accidents, and the object of my invention is to guard against these contingencies by producing an attachment which will automatically hold the vehicle in its course without the constant attention of the driver, while at the same time permitting the vehicle to be turned to either side when necessary.

This attachment will allow full turning radius of car and without straining the steering apparatus and will prevent radius rod from being bent when striking a curb or objects on the road as it will deflect the opposite direction, the springs taking up the shock. It will hold the car steady and tend to prevent accidents in case the steering apparatus should break and will further tend to dispel fear of accidents from the buckling of wheels when striking obstructions.

With the above and other objects in view, the nature of which will more fully appear as the description proceeds, the invention consists in the novel construction, combination and arrangement of parts as herein fully described, illustrated and claimed.

In the accompanying drawings;

Figure 1 is a plan view of the device in place;

Figure 2 is a front elevational view;

Figure 3 is an end sectional view on line 3—3 of Fig. 1;

Figure 4 is a sectional view on line 4—4 of Fig. 1;

Figure 5 is a perspective view of the forked member employed for separating the springs; and

Figure 6 is an end sectional view on line 6—6 of Fig. 1.

Referring to the drawings in detail, wherein like numerals of reference refer to like parts throughout the several views, 10 represents the conventional cross tie rod for connection with the front knuckles of the steering column. Said tie rod 10 is shown broken away and the knuckles are not shown.

Axle clips 11—11 are clamped to the front axle 12 and are secured thereon by means of the nuts 13.

Said clips 11—11 are provided with integral arms 14—14 projecting rearwardly and which terminate in integral annular portions 15—15 having the eyes or openings therethrough adapted to receive a horizontally extending spring bar 16, adjacent its terminals. The spring bar 16 is squared adjacent its terminals in order to pass through said openings which are likewise square in contour.

Said arms 14—14 are held in position on said rod 16 by means of nuts 17—17, said rod 16 being threaded at its terminals to engage the threads on said nuts.

The nuts 17—17 are provided with the casselations 18 and cotter pins 19—19 are inserted therethrough to prevent displacement of said nuts.

The spring bar 16 is connected to the tie rod 16 by means of a forked member 20, having the integral arms 21—21, adapted to fit loosely over the bar 16 and projecting thereabeyond to allow for the in and out movement of said forked member 20.

The said forked member 20 is bent outwardly on either side as at 25—25 to provide a clearance space between it and the tie rod 10 and is held in position on said rod 10 by means of the saddle clips 23—23 and nuts 24—24.

The arms 21—21 of the forked member 20 are adapted to fit loosely over the spring

bar 16, as beforesaid, substantially, centrally thereof. The portion of the rod 16 enclosed by said arms 21—21, designated by the numeral 22, is swaged or bulged to form the shoulders 22′—22′ on the upper and lower portions thereof. Annular washers 26 and 28 are positioned around said rod 16 and abut against the arms 21—21. A coil spring 27 is positioned around said rod 16 and is adapted for compression between the washer 26 and an annular washer 26′ on said rod 16 abutting an arm 14. A like coil spring 29 is likewise positioned around the bar 16 and is adapted for compression between the washer 28 and an annular washer 28′ on said bar 16 abutting the opposite arm 14.

As the steering knuckles are actuated by the steering wheel of the steering mechanism the tie bar 10 moves relative to the axle 12 and therewith an arm 21 of the forked member 20 will compress against the washer 26, or 28 according to the direction of movement of said tie bar 10, compressing the spring 27 or 29, the opposite spring remaining undisturbed. As the steering wheel is released the engaged coil spring 27 or 29 will force the arms 21—21, and thereby the forked member 20, to their normal position and therewith the tie bar 10, consequently restoring the steering mechanism to its neutral position.

From the foregoing description, taken in connection with the accompanying drawings, the advantage of the construction and operation of the device shown will be readily understood by those skilled in the art to which the invention pertains, and while I have described the principle of operation, together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative and that such changes may be made as are within the scope of the appended claim.

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

An attachment for the steering gear of an automobile, a spring holding rod disposed between the drag link and front axle, said rod being provided between its ends with stop ribs integral therewith, means for attaching the ends of said rod with the front axle, washers on the rod upon opposite sides of the ribs, coil springs upon the ends of the rod engaging the washers, and a forked element embodying an off-set base secured to the drag link and a pair of spaced ears to engage between the washers.

In testimony whereof I affix my signature.

JOSEPH HOFFMAN.