A. L. SOPER.

SUPPORT FOR SPEEDOMETER GEARING.

APPLICATION FILED MAY 5, 1910

1,004,598.

Patented Oct. 3, 1911.

Fig. 1.

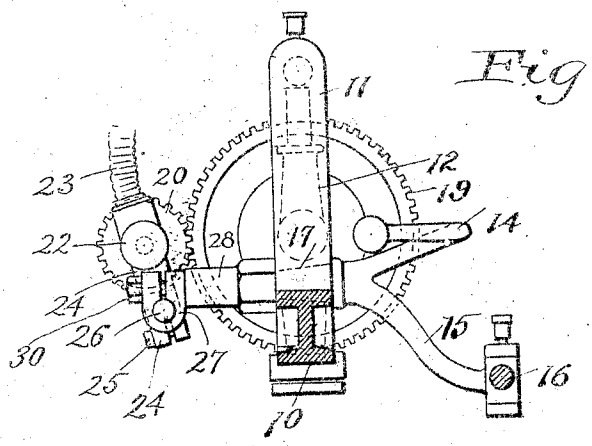


Fig. 2.

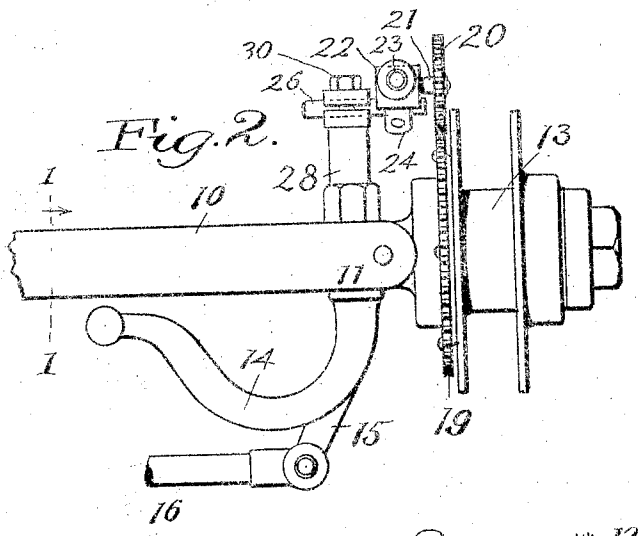
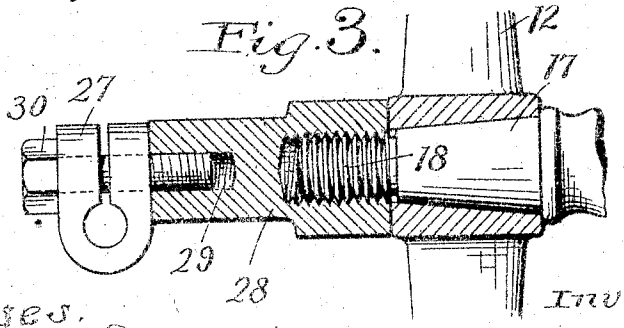


Fig. 3.



Witnesses.
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UNITED STATES PATENT OFFICE.

ALBERT L. SOPER, OF CLEVELAND, OHIO, ASSIGNOR TO WARNER INSTRUMENT COMPANY, OF BELOIT, WISCONSIN, A CORPORATION OF ILLINOIS.

SUPPORT FOR SPEEDOMETER-GEARING.

1,004,598. Specification of Letters Patent. Patented Oct. 3, 1911.

Application filed May 5, 1910. Serial No. 559,557.

To all whom it may concern:

Be it known that I, ALBERT L. SOPER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Supports for Speedometer-Gearing, of which the following is a full, clear, and exact description.

This invention relates to improvements in devices for supporting the driven gear members for speedometers or other measuring instruments in proper relation to the gear on the front wheel of a motor vehicle.

It is customary at the present time and, in fact, almost the universal practice to support the driven gear which meshes with the gear on the front wheel and also the other gears which transmit the movement of the driven gear to the flexible shaft leading to the speedometer by means of a rather complicated clamping device which is fastened about an arm extending outwardly from the steering knuckle. This clamping device is objectionable not only because of its complicated construction and number of parts of which it is composed, but also for the reason that it is liable to slip along the arm on which it is mounted.

The main object of the present invention is to do away with this clamping device and to provide for the elements above mentioned, a supporting means which requires a less number of parts, which is simple in construction, easily applied to or removed from a steering knuckle, which permits the use of certain standard parts of the construction commonly employed, and which holds the supported elements in proper position more positively and securely than at the present time and does away with the liability of disarrangement of the coöperating gears, such as occurs by the slipping of the clamping device at present employed.

The above and other objects are attained by my invention which may be briefly summarized as consisting in certain novel details of construction and combinations and arrangements of parts which will be described in the specification and set forth in the appended claims.

Reference is had to the accompanying sheet of drawings, wherein—

Figure 1 is a sectional view through the front axle looking in the direction of the front wheel having the gear which meshes with the driven gear forming part of the transmitting mechanism between the front wheel and the speedmoter, or other speed or distance measuring device, this section being taken substantially along the line 1—1 of Fig. 2, looking in the direction indicated by the arrow; Fig. 2 is a plan view of the same showing the hub of the front wheel referred to; Fig. 3 is an enlarged vertical sectional view through the steering knuckle and a portion of the speedometer gear supporting mechanism.

Referring now to the figures of the drawing, 10 represents a portion of the front axle having at 11, (Fig. 1), a yoke portion which supports in the usual manner a steering knuckle 12 shown by dotted lines in Fig. 1, and shown partially by full lines in Fig. 3. This steering knuckle supports in the usual manner the front wheel of a motor vehicle, the hub of this wheel being shown in Fig. 2 at 13. The knuckle 12 is provided, as is usual, with two arms 14 and 15, the former being adapted to be connected to the steering column, and the latter being connected by a rod 16 to a corresponding arm on the steering knuckle supporting the opposite front wheel so that the steering movement imparted to one knuckle and one front wheel will be transmitted to the other front wheel. These two arms 14 and 15 are formed in one integral piece having a shank portion 17, which is beveled, as shown, and is usually secured in a suitable beveled opening in the vertical portion of the knuckle 12 by means of an ordinary nut which is screwed onto the threaded end portion 18 which projects through and beyond the beveled opening of the knuckle.

Secured to the side of the hub 13 is a gear 19 for operating the speedometer or other measuring instrument. This gear 19 is engaged by a small gear 20 carried by a spindle 21 which is utilized for driving suitable gears which are contained within a casing

22 and are employed for transmitting movement of the gears 19 and 20 to a flexible shaft contained within a flexible tube 23 and extending to the speedometer or other measuring instrument on the dashboard of the vehicle. These parts just described may be of any usual or suitable construction. The casing 22 and the gears contained therein, as well as the spindle 21 and gear 20 are fixed to a clamping member 24 having clamping jaws which are clamped by means of a screw 25 to an arm or bracket 26. This arm 26 is also engaged by a clamping member 27, which, together with the arm 26 and clamping member 24 may be of standard construction.

To do away with the complicated clamping device commonly employed and to secure the speedometer gears in proper position in a simple manner and to attain the other objects enumerated above, I employ a member 28 which is fixed to the steering knuckle and onto the end of which the clamping member 27 is rigidly secured. In the embodiment of my invention here shown, the member 28 is a special nut which is screwed onto the threaded end 18 of the member having the arms 14 and 15, and replaces the ordinary nut which when screwed onto the threaded portion 18 of said member secures the latter to the knuckle. This nut is provided with an extension having in its outer end a threaded socket 29, and the clamping member 27, as well as the other parts carried thereby are supported and secured in proper position by means of a bolt or screw 30 which passes through the jaws of the clamping member 27 and is screwed into the socket 29, it being understood that this nut 28 is of sufficient length that when the clamping device 27 is fastened onto the end thereof, the gear 20 will be in proper relation with respect to the gear 19. However, an adjustment of the gear 20 is permissible because of the arm 26 and the member 24 which is clamped thereto. It will be noted that when this bolt 30 which clamps the member 27 to the end of the nut 28 is tightened, it not only rigidly fastens and supports the speedometer gears to the clamping nut 28, but also clamps the member 27 securely to the arm 26.

This construction which I have provided has been found by long usage to be very effective and possesses all the different advantages above enumerated. At the same time it is inexpensive and can be applied with slight modifications to practically all machines.

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

1. In combination with a vehicle wheel and steering knuckle having a vertical portion supporting the wheel and a pair of steering arms, a gear carried by the wheel, means for transmitting movement from said gear to a measuring device comprising a transmitting gear which meshes with said gear, means for holding the transmitting gear in proper position relative to the gear which it engages comprising a member in addition to the steering arms projecting from the vertical portion of the knuckle, and a supporting device for said transmitting gear clamped to the extreme end of said member.

2. The combination with a vehicle wheel and steering knuckle supporting the same, a gear carried by the wheel, means for transmitting movement from said gear to a measuring device comprising a transmitting gear which meshes with said gear carried by the wheel, means for holding the transmitting gear in proper position relative to the gear which it engages comprising a member fixed to the knuckle and provided at its outer end with a threaded socket, a supporting device for said transmitting gear, and a bolt passing through said supporting device into the threaded socket of said member.

3. In combination with a vehicle wheel and a steering knuckle supporting the same, means for transmitting movement from said wheel to a speedometer comprising a gear fixed to the wheel, and a second gear which engages the same, means for supporting said second gear in proper position relative to the first gear comprising a bracket on which said second gear is supported, a clamping device which receives said bracket, a member projecting outwardly from the vertical portion of the knuckle, and a single bolt for clamping said clamping device about said bracket and extending into the end of said member projecting from the knuckle so as to secure the clamping device thereto.

4. In combination with a vehicle wheel and knuckle supporting the same, a steering arm, a nut for securing the steering arm to the knuckle, gearing for transmitting movement from the wheel to the speedometer comprising a gear fixed to the wheel and a second gear which engages the same, and means for holding the said second gear in proper position relative to the first gear comprising a supporting member for said gear secured to said nut.

5. In combination, a vehicle wheel, a steering knuckle, on which said wheel is mounted, a steering arm carried by said knuckle, said arm having a portion extending through said knuckle, a nut engaging the end of said portion, said nut having a threaded socket at its outer end, means for transmitting movement from the steering wheel to a speedometer comprising a pair of gears, one carried by the wheel and the other supported in position to be driven thereby, means for

supporting said driven gear comprising a supporting member, and a bolt extending into the socket of said nut for securing said supporting member to the end of said nut.

6. The combination of a vehicle wheel-supporting knuckle, a steering arm mounted in said knuckle, a nut for securing said steering arm to the knuckle, said nut having an extended shank, a speedometer gear support mounted upon said shank, and a speedometer gear journaled on said support.

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

ALBERT L. SOPER.

Witnesses:
H. R. SULLIVAN,
A. F. KWIS.