Dec. 25, 1923. 1,478,389

W. F. HARRINGTON

STEERING COLUMN SUPPORT

Filed July 9, 1920

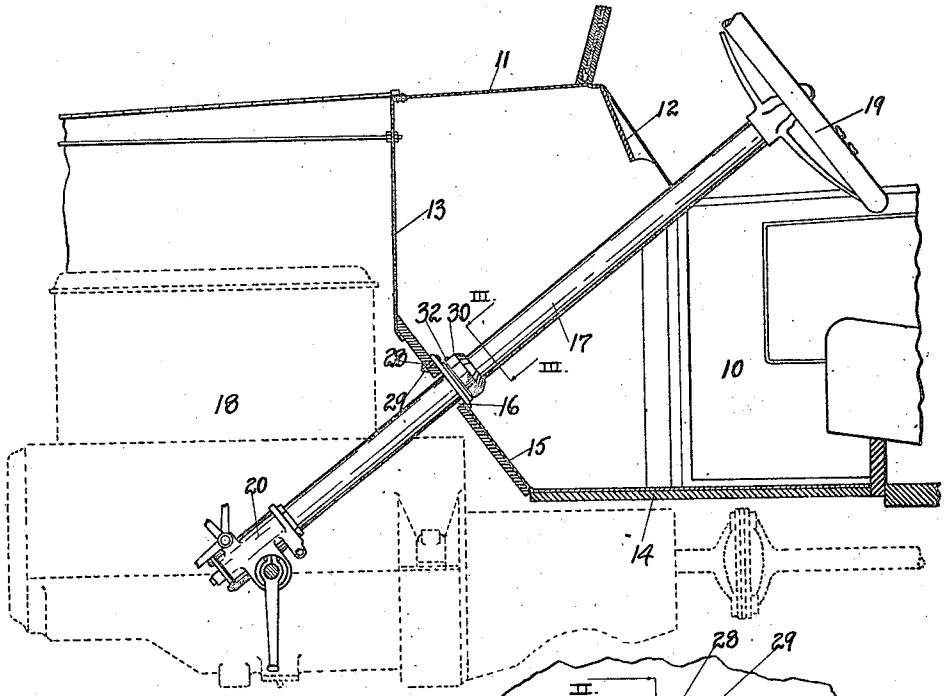


FIG. I.

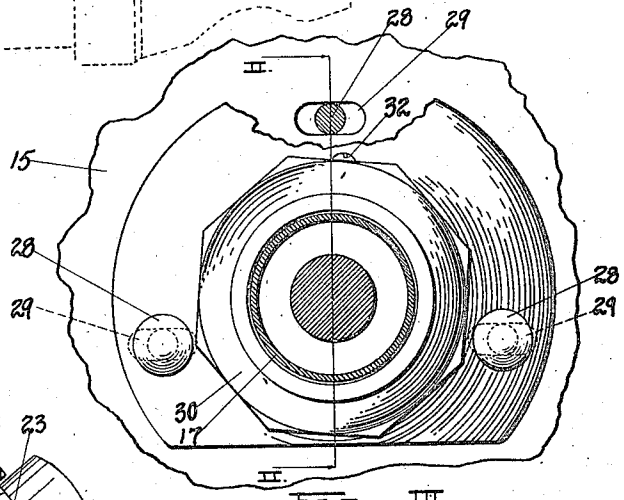


FIG. III.

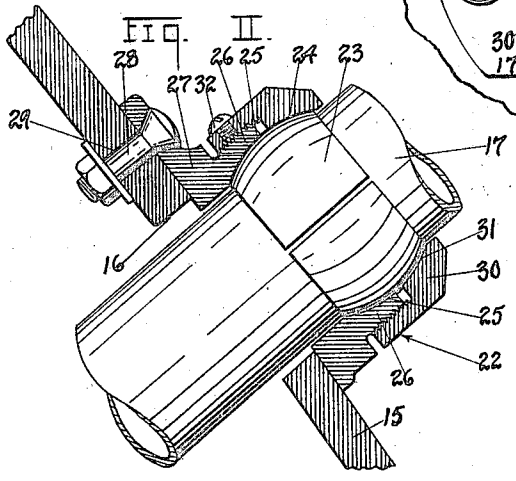


FIG. II.

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UNITED STATES PATENT OFFICE.

WILLIAM F. HARRINGTON, OF TOLEDO, OHIO, ASSIGNOR TO THE WILLYS-OVERLAND COMPANY, OF TOLEDO, OHIO, A CORPORATION OF OHIO.

STEERING-COLUMN SUPPORT.

Application filed July 9, 1920. Serial No. 394,936.

To all whom it may concern:

Be it known that I, WILLIAM F. HARRINGTON, residing at Toledo, county of Lucas, State of Ohio, have invented certain new and useful Improvements in Steering-Column Supports, of which I declare the following to be a full, clear, and exact description.

This invention relates to improvements in steering column supports for motor vehicles and particularly to the support or bearing which supports the same from the vehicle body.

One of the objects of this invention is to provide a support for the steering column whereby the same may be adjusted in a variety of positions.

A further object of this invention is to provide a support which may be adjustable with relation to the vehicle body.

A further object of this invention is to provide a sole support for the steering column intermediate its ends.

A further object of this invention is to provide a means for securely clamping the steering column in position after the same has been adjusted to the desired position.

Further objects of this invention relate to economies of manufacture and details of construction as will hereinafter appear from the detailed description to follow. I accomplish the objects of my invention in one instance by the devices and means described in the following specification, but it is evident that the same may be varied widely without departing from the scope of the invention as pointed out in the appended claims. A structure constituting one embodiment of my invention, which may be the preferred, is illustrated in the accompanying drawing forming a part hereof, in which:

Figure I is a sectional elevational view of a motor vehicle body, showing my invention in side elevation.

Figure II is an enlarged detail section view, taken on the line II—II of Fig. III.

Figure III is an enlarged detail view taken on the line III—III of Fig. I.

In the drawing, similar reference numerals refer to similar parts throughout the several views and the sectional views are taken looking in the direction of the arrows at the ends of the section lines.

Heretofore it has been the common practice to support the steering column from the vehicle body near the lower end of the steering column and also provide a second support or brace from the instrument board near the upper end of the steering column. This method has been found to have many disadvantages, one of these being that because of irregularities of the body construction, the supports or braces are not always in alignment, thus making it difficult to insert the steering column. As the bolt holes in the toe board for securing the same to the body are not always in proper registry, the toe board is quite liable to be shifted laterally when assembling it thus resulting in throwing the central support for the steering column out of alignment with the bearings at the upper and lower ends of the steering column. To remedy these difficulties and simplify the construction, I have omitted the bearing at the upper end of the steering column and have provided a support mounted on the toe board which allows for the adjustment of the steering column to a variety of adjusted positions. The support may also be shifted laterally on the toe board to provide for any irregularities in the assembly of the toe board to the vehicle body.

Considering the numbered parts of the drawing, I have shown a vehicle body 10, having a cowl 11, an instrument board 12, and a dash 13. The body 10 is provided with the usual floor 14 and a toe board 15 having an opening 16 through which the steering column 17 is adapted to extend. Immediately in front of the dash 13 and toe board 15 I have shown in dotted lines an internal combustion engine 18.

At the upper end of the steering column is provided a steering wheel 19, and at the lower end a housing 20 for the steering gear mechanism. The housing 20 may be supported from the vehicle frame (not shown) as is the common practice in motor vehicle construction. The steering wheel 19 is connected with the steering gear mechanism by

means of the shaft 21 extending through the steering column 17.

In the present instance I have shown the steering column support indicated generally by the numeral 22 which may be adjusted laterally on the toe board and is provided with a ball and socket clamp so that the steering column may be secured in a variety of adjusted positions. A split ring 23 having a convex outer surface 24 is slidably mounted on the steering column. The convex surface 24 of the split ring 23 is adapted to engage the concave surface 25 provided in the flange 26 of the plate 27. The plate 27 may be adjustably secured to the toe board 15 by means of the bolts 28 extending through the transverse slots 29 in the toe board. Thus it will be seen that the plate 27 may be adjusted to compensate for any irregularities in the toe board and the steering column 17 may be brought in alignment with its bearing on the vehicle frame (not shown). A nut 30 having a concave inner surface 31 corresponding to the convex outer surface of the split ring 23 is threaded on the flange 26 of the plate 27. When the nut 30 is screwed down on the plate 27 the split ring 23 will be firmly clamped on the steering column 17 and the outer convex surface 24 will seat in the concave portions 26 and 31 of the plate 27 and nut 30, thus firmly holding the steering column 17 in the desired position. To prevent the nut 30 from working loose a set screw 32 may be provided to lock the nut 30 after the same has been tightened to the desired position.

From the above description the construction and operation should be readily understood. After the steering column has been mounted on its support at its lower end, the split ring 23 slidably mounted on the steering column may be adjusted to any desired angle in its seat 25 and the nut 30 tightened to firmly lock the steering column in the position so adjusted. The plate 27 may also be adjusted laterally to properly align the steering column.

I am aware that the particular embodiment of my invention, which I have shown and described, is susceptible of considerable variation without departing from the spirit thereof, and, therefore, I desire to claim my invention broadly, as well as specifically, as indicated by the appended claims.

What I claim as new and desire to claim by Letters Patent is:

1. In a motor vehicle, a frame, a body secured thereto having an opening, a steering column secured to said frame and projecting through said opening and a universal connection between said column and body comprising an element adjustable laterally of the body for supporting said column therefrom.

2. In a motor vehicle, a frame, a body secured thereto having an opening, a steering column secured adjacent one end to said frame and extending through said opening, means comprising a ring having a convex surface mounted on said steering column, and members having concave surfaces co-operating with the convex surface of said ring for fixing said column at an intermediate point to said body in various positions of adjustment laterally thereof.

3. In a motor vehicle, a frame, a body secured thereto having an opening, a steering column secured to said frame against movement laterally thereof, an annular convex projection thereon, a bracket clamped to said projection and laterally adjustable means for securing said bracket to said body to compensate for non-alinement of the column and opening in the body.

4. In a steering column mounting, a steering column, a contractable ring having a convex surface mounted on said steering column, and members having concave surfaces cooperating with the convex surface of said ring to bind said ring on the steering column, one of said members being supported by the vehicle body.

5. In a steering column mounting, a steering column, a split ring having a convex surface mounted on said steering column, and members having concave surfaces cooperating with the convex surface of said ring to engage and clamp said ring on the steering column, one of said members being supported by the vehicle body.

6. In a motor vehicle, a steering column, a steering wheel shaft enclosed thereby, a split ring mounted on said steering column intermediate its ends, a plate carried by the vehicle body and having an outturned flange, and an adjustable nut cooperating with said flange and said ring to clamp said ring to said column to rigidly support the latter from said body.

7. In a motor vehicle, a steering column adapted to enclose a steering wheel shaft, a divided ring having a convex surface mounted on said steering column, a plate carried by the vehicle body and having an inner concave surface cooperating with the convex surface of said ring, and a nut having a concave surface adjustably mounted on said plate and co-operating therewith to clamp the ring to the column to fixedly secure the column to the mounting.

8. In a motor vehicle, a steering column adapted to enclose a steering wheel shaft, a split ring having a convex surface mounted on said steering column intermediate its ends, a plate adjustably mounted on the vehicle body and having an inner concave surface cooperating with the convex surface of said ring, a nut having an inner concave surface adjustably mounted on said plate and cooperating with said plate and said ring to fix

said steering column to said plate whereby the column may be adjustably mounted on the vehicle body.

9. In a steering column mounting for a vehicle, a steering column adapted to enclose a steering wheel shaft, means for fixing said column to said vehicle comprising a split ring mounted on said steering column intermediate its ends, and having a convex outer surface, a plate mounted on the vehicle and having a concave inner surface, and a nut adjustably mounted on said plate and having a concave inner surface, the convex surface of said ring being engaged by the concave surfaces of said plate and said nut to firmly clamp said parts together.

In testimony whereof, I affix my signature.

WILLIAM F. HARRINGTON.