No. 723,075. PATENTED MAR. 17, 1903.

C. F. THOMS.

STEERING HEAD FOR MOTOR CYCLES.

APPLICATION FILED SEPT. 27, 1902.

NO MODEL.

Fig. 1.

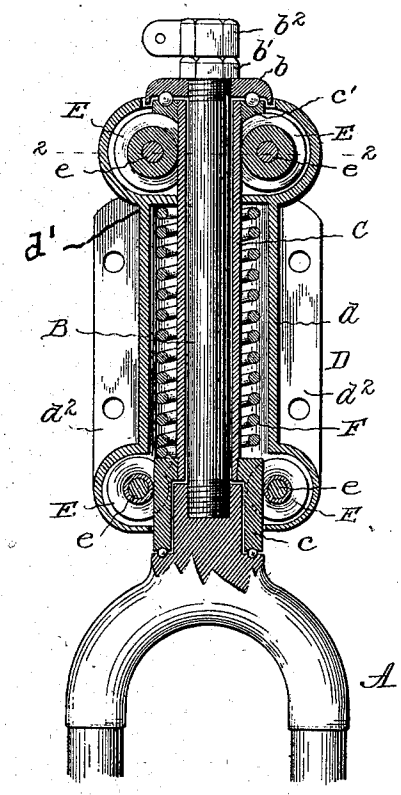
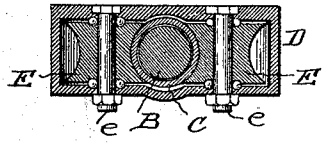


Fig. 2.



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UNITED STATES PATENT OFFICE.

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STEERING-HEAD FOR MOTOR-CYCLES.

SPECIFICATION forming part of Letters Patent No. 723,075, dated March 17, 1903.

Application filed September 27, 1902. Serial No. 125,125. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. THOMS, a citizen of the United States, and a resident of Highlandtown, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in Steering-Heads for Motor-Vehicles, of which the following is a specification.

The primary object of this invention is to provide a steering-head which is especially adapted for use in connection with a motor-vehicle of that class having a single front wheel by which the front end of the vehicle-body is supported and by which the said vehicle is steered.

Other objects of the invention are to provide a steering-head for this purpose in which the parts are firmly braced against lateral strain and friction thereof reduced to the minimum, so that the steering-wheel can be easily turned and will not bind.

With the above objects in view the invention consists in the combination, with the steering-post and bearing-sleeve, of horizontally-disposed rollers carried by a frame attached to the body of the vehicle and between which rollers the steering-post and sleeve are confined and vertically movable, together with a spring interposed between the bearing-sleeve and roller-carrying frame.

The invention further consists in the particular construction and combination of parts, all as hereinafter fully described, and more specifically set forth in the appended claims.

In the accompanying drawings, which illustrate my invention, Figure 1 is a vertical sectional view through a steering-head constructed in accordance with my invention, and Fig. 2 is a transverse sectional view on the line 2 2 of Fig. 1.

The letter A designates the fork, in which the front wheel is journaled, as is usual, and B designates the steering-post, which is rigidly secured to the head of the fork, being screwed into a threaded socket therein, as shown. Mounted upon the steering-post is a bearing-sleeve C, having at its lower end a collar *c*, which turns upon the fork-head, and at its upper end a ring *c'*, upon which bears a ring *b*, threaded upon the upper end of the steering-post, antifriction-balls being interposed between the rings *c'* and *b* and between the collar *c* and head of the fork, while the aforesaid bearings are adjusted by the ring *b*. The adjusting-ring *b* is held by the set-nuts *b'* and b^2, the latter having ears, as shown, between which the steering-lever is pivotally attached.

D designates a frame or casing which incloses the bearing-sleeve C and supports the same with respect to the vehicle-body. In the upper and lower ends of this frame or casing are journaled horizontally-disposed rollers E, a pair being located in each end of the casing and are arranged to bear against opposite sides of the bearing-sleeve C. These rollers firmly support the steering-post and bearing-sleeve in vertical position and permit a movement of the same vertically in the casing for the purpose hereinafter explained. Said rollers are journaled on pins *e* and are provided with antifriction-bearings. (See Fig. 2.)

The portion of the casing D between the rollers E is cylindrical, as at *d*, and within this cylindrical portion is a helical spring F, adapted to form a buffer or cushion between the casing and steering-post. This spring bears upon the collar *c* of the bearing-sleeve and against an annular wall *d'*, formed at the upper end of the cylindrical portion *d* of the casing. The casing is provided with side extensions or wings d^2, by which it is bolted or otherwise fastened to the front of the vehicle.

The operation of my improved steering-head will be readily understood from the foregoing description in connection with the accompanying drawings, for it will be seen that the steering-head B is rotatable in the bearing-sleeve C and that said sleeve is loosely mounted in the casing to have both a vertical and rotary movement, special provision being made for a vertical movement, as it is not intended to have a rotary movement, inasmuch as the steering-post turns therein. The vertical movement of the steering-post and sleeve in the casing is taken up or cushioned by the spring F and is limited in one direction by the rollers at the upper end of the casing striking against the bearing-ring *c'* and in the opposite direction by the compression

of the spring. This construction of steering-head forms a strong and durable connection between the steering-post and vehicle-body, thoroughly bracing the parts against lateral strain and presenting a spring-cushion that will properly take up the jar at this end of the vehicle.

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

1. In a steering-head for vehicles, the combination, of a frame or casing having a cylindrical portion with an annular wall at its upper end forming a bearing and stop, a steering-post and sleeve mounted in said casing, a helical spring mounted on the sleeve and between a shoulder thereon and the aforesaid annular wall of the casing, and horizontally-disposed grooved rollers journaled in the upper and lower portions of the casing and bearing against the upper and lower ends of the sleeve, substantially as shown and described.

2. In a steering-head for vehicles, the combination, of a casing attached to the body of the vehicle and comprising a vertically-disposed cylindrical portion of considerable length, horizontally-disposed housings at the ends of said cylindrical portions at both sides thereof, and attaching-webs projecting laterally from the cylindrical portion; the steering-post extending through the cylindrical portion of the casing, and a spring interposed between said steering-post and casing; together with the peripherally-grooved rollers mounted in the housings on horizontal axes and adapted to form guides at the upper and lower ends of the steering-post to relieve lateral strain thereon.

3. In a steering-head for vehicles, the combination, of a casing attached to the body of the vehicle and comprising a vertically-disposed cylindrical portion, horizontally-disposed housings at the ends of said cylindrical portion at both sides of the center thereof, and attaching-webs projecting laterally from the cylindrical portion, the latter having internally an annular flange forming a bearing and stop; the steering-post, a bearing-sleeve loosely mounted on the steering-post between bearings thereon and provided with a shoulder near its lower end, and a helical spring located within the cylindrical portion of the casing on the sleeve and interposed between the bearing-flange on the casing and shoulder on the sleeve; together with the peripherally-grooved rollers mounted in the housings on horizontal axes to bear snugly against the opposite sides of the bearing-sleeve, the upper set of grooved rollers being adapted to engage the upper post-bearing to limit the movement of the parts in one direction.

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

CHARLES F. THOMS.

Witnesses:
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