

F. H. POMMER.
 SPRING CUSHION FORK STRUCTURE FOR MOTOR CYCLES.
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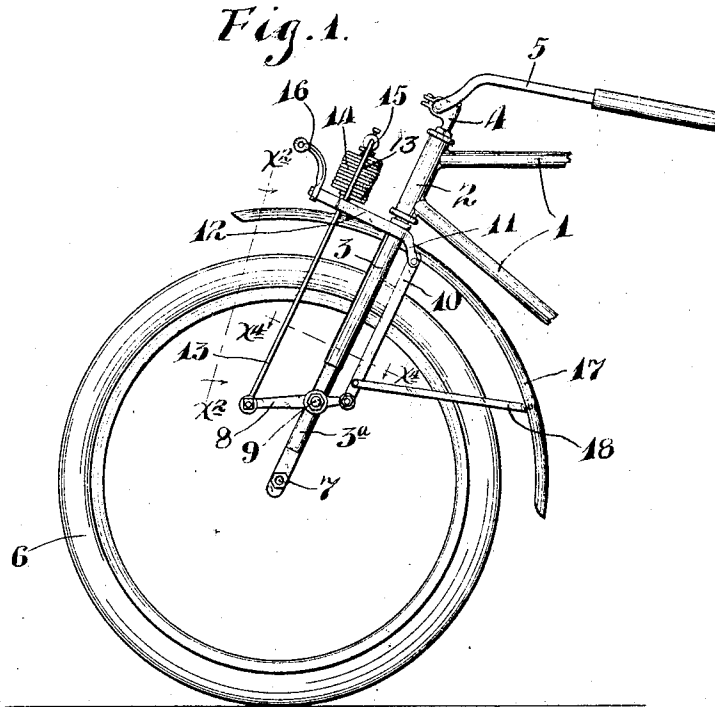
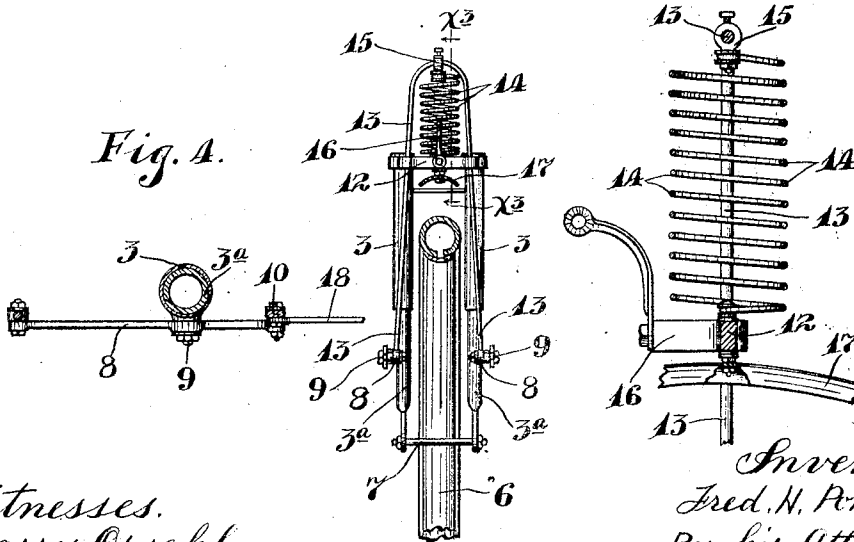


Fig. 2.

Fig. 3.

Fig. 4.



Witnesses.
 Harry Opsahl.
 E. C. Skinkle

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UNITED STATES PATENT OFFICE.

FRED H. POMMER, OF MINNEAPOLIS, MINNESOTA.

SPRING-CUSHION FORK STRUCTURE FOR MOTOR-CYCLES.

980,999.

Specification of Letters Patent.

Patented Jan. 10, 1911.

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To all whom it may concern:

Be it known that I, FRED H. POMMER, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Spring-Cushion Fork Structures for Motor-Cycles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates particularly to motor cycles and has for its object to provide an improved spring cushion fork structure therefor.

To the above ends, the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a view in side elevation, with some parts broken away and some parts removed, showing the front portion of the motor cycle; Fig. 2 is a front elevation, with some parts sectioned, on the line $x^2 x^2$ of Fig. 1, and with some parts broken away; Fig. 3 is a section taken on the line $x^3 x^3$ of Fig. 2, some parts being broken away and the parts being shown on a larger scale than in Figs. 1 and 2; and Fig. 4 is an approximately horizontal section taken through one side of the fork structure, on the line $x^4 x^4$ of Fig. 1.

The numeral 1 indicates the motor cycle frame which, at its front end, is provided with the customary fork socket 2, in which the stem of the front fork 3 is journaled in the usual way, being provided with the customary handle bar posts 4 to which the handle bars 5 are secured. The legs of the fork 3 are made up of telescopic sections, the lower end members 3^a of which telescope into the upper or main sections of the said fork legs. The front wheel 6 is journaled in the usual or any suitable way on a spindle or axle 7 which is rigidly secured to and connects the lower ends of the movable fork sections 3^a.

Levers 8 are intermediately pivoted at 9 to the intermediate portions of the movable lower end sections 3^a of the fork legs, and the relatively short rear ends of these levers

are connected by links 10 to lugs 11 secured to and projecting rearward from the crown of the fork 3. The bracket 12 is also rigidly secured to the crown of the fork 3 and projects forwardly therefrom. The relatively long front ends of the levers 8 are pivotally connected to the lower ends of the prongs of a U-shaped link 13 that works through and is guided by the said bracket 12. A heavy coiled tension spring 14 is anchored, at its lower end, to the bracket 12, and, at its upper end, is attached by a coupling 15 to the crown of the said U-shaped or forked link 13.

The numeral 16 indicates an extension of the bracket 12, to which a lamp is adapted to be applied, but which, however, constitutes no part of the present invention.

The numeral 17 indicates a mud guard attached to the crown of the fork 3 and, as shown, connected to the links 10 by metal straps 18.

The weight of the machine frame and parts carried thereby is, of course, carried partly on the rear wheel and partly on the front wheel through the front fork structure. The weight on the front fork structure is carried through the spring 14, but the levers 8 multiply the movement of the spring as compared with the telescopic movement of the fork legs and, in this way, the power of the said spring is correspondingly increased and is made more sensitive. The friction of the telescopic engagement between the sections of the fork prongs may be reduced to a minimum by lubrication preferably afforded by hard oil placed within the upper portions of the outer telescopic sections of the said fork sections.

The construction above described affords a highly efficient cushion or spring connection between the front wheel and the steering fork and makes the machine extremely easy riding and but slightly sensitive to the ordinary shocks incident to travel over rough roads. Furthermore, the improved spring-fork structure is of comparatively small cost and is durable. These statements have been demonstrated by the actual use of a fork structure designed as shown in the drawings.

What I claim is:

1. In a machine of the kind described, the combination with a fork having axially movable lower end sections, levers pivoted

to the latter, links connecting said levers to the upper fork structure, and a spring connection, independent of said links and said fork, between the said levers and the said upper fork structure.

2. In a machine of the kind described, the combination with a fork having axially movable lower end sections, levers intermediately pivoted to the latter, links connecting the rear ends of the said levers to the upper fork structure, and a spring connection between the front ends of said levers and the said upper fork structure.

3. In a machine of the kind described, the combination with a fork having axially movable lower end sections, levers intermediately pivoted to the latter, links connecting the rear ends of said levers to the upper fork structure, a forked link connected to the front ends of said levers and guided by the upper fork structure, and a tension spring anchored to the upper fork structure

and to the upper portion of the said forked link.

4. In a machine of the kind described, the combination with a fork having telescopic lower end sections, levers intermediately pivoted to the latter, links connecting the rear ends of said levers to the upper fork structure, a bracket rigidly secured to and projecting forward from the upper fork structure, a U-shaped link guided by said bracket and attached to the front ends of said levers, and a tension spring anchored to the said bracket and to the crown of the upper portion of said U-shaped link, substantially as described.

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

FRED H. POMMER.

Witnesses:

ALICE V. SWANSON,
HARRY D. KILGORE.