M. L. PREVITALI.

MOTOR CYCLE SPRING STRUCTURE.

APPLICATION FILED AUG. 28, 1920.

1,407,218. Patented Feb. 21, 1922.

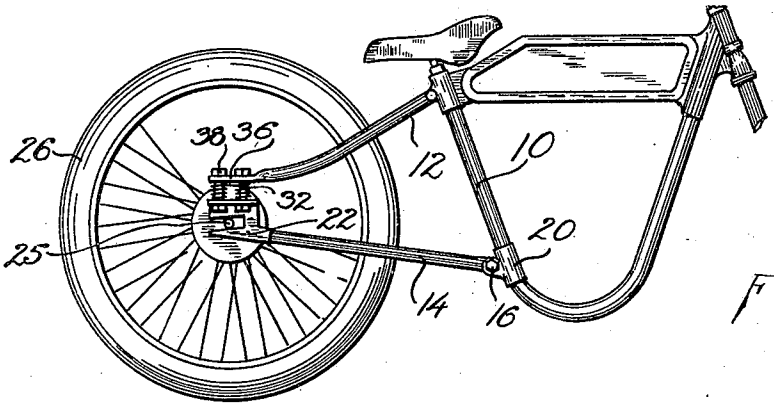


Fig. 1.

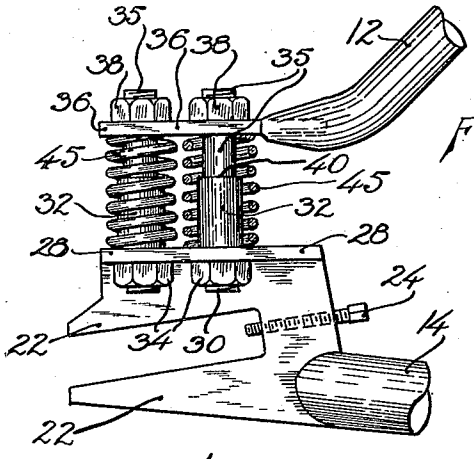


Fig. 2.

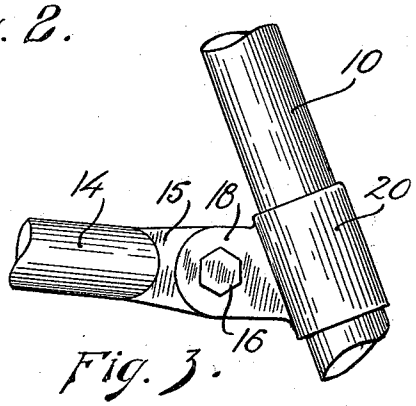


Fig. 3.

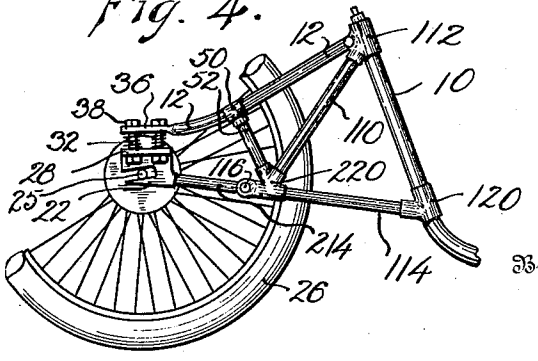


Fig. 4.

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MOTOR-CYCLE SPRING STRUCTURE.

1,407,218. Specification of Letters Patent. Patented Feb. 21, 1922.

Application filed August 28, 1920. Serial No. 406,688.

To all whom it may concern:

Be it known that I, MARIO L. PREVITALI, a citizen of the United States, residing at the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Motor-Cycle Spring Structures; and I do 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, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

The object of this invention is to provide a spring structure for the rear of motor cycle frames whereby said rear may be cushioned from shocks of travel, as the front of the frame is when provided with springs on the front forks.

Briefly the invention comprises separating the rear ends of the upper and lower rear forks by means of pins and springs about said pins, the rear wheel being supported in the rear ends of the lower rear forks by the usual wheel-supporting plates. These plates are provided with flanges in which said pins are fixed, the pins at their upper ends being slidably received in narrow plates secured to the rear ends of the upper rear forks, and said springs being mounted between said flanges and said narrow plates.

In the drawings:

Fig. 1 is an elevation illustrating the application of the invention;

Fig. 2 is an enlarged elevational detail;

Fig. 3 is a similar view of another detail; and Fig. 4 is an elevation showing a slight modification.

In the form of Figs. 1, 2 and 3, the main frame of the motor cycle is represented at 10, the upper rear forks 12 being rigidly connected thereto adjacent the saddle, while the lower rear forks 14 are pivotally connected thereto adjacent the bottom by means of ears 15 on the forks and a pivot pin 16 passing therethrough and through ears 18 on a union 20 secured to the frame 10. The rear ends of the forks 14 carry the usual axle-supporting plates 22 having adjusting means 24 for positioning the axle 25 of the rear wheel 26. The upper edge of each plate 22 has an outwardly directed horizontal flange 28 which receives the reduced lower ends 30 of pins 32 rigidly secured in the respective flange 28 by means of nuts or the like 34. Said pins 32 also have elongated reduced upper ends 35 which pass through corresponding plates 36 rigidly secured to the rear ends of the upper rear forks 12 and lying directly above the flanges 28. Nuts 38 on the reduced ends 35 limit the upward movement of the plates 36 thereon, while the shoulders 40 at the bases of the reduced portions 35 limit the downward movement of said plates 36. Springs 45 mounted upon said pins 32 bear at their opposite ends upon the plates 36 and the flanges 28, and thereby cushion the rear of the machine from shocks resulting from a rough road.

In the form of Fig. 4, the main frame includes, in addition to the frame part 10, a bracing frame bar 110, which extends from the union 112 at the top of frame 10, where upper forks 12 are joined thereto, to a union 220 on the rear ends of a rigidly mounted rear lower fork-member 114 whose forward end is secured to frame member 10 by a fixed union 120. The member 114 is short and to the rear ends thereof immediately behind union 220, the rear ends or extensions 214 of the forks are pivoted at 116. This produces a more rigid structure than that of the other form. To strengthen the structure further, a union 50 is secured adjacent the rear end of the upper rear forks 12, and a brace or reinforcing bar 52 extends from said union 50 down to said union 220, thus so bracing the forks 12 that it will be impossible to bind the parts and prevent operation of the springs 45 due to any possible tendency of the forks 12 to spring or yield. Thus the fork extensions will swing about the pivot 116 when the springs yield, as do forks 14 about pivot 16 of the other form.

I claim:

1. A spring structure for motor cycles, comprising a frame, upper rear fork-members rigidly connected thereto and having their rear ends flattened and provided with an opening, lower rear fork-members pivotally connected to said frame, an axle plate connected to the rear end of each rear fork-member, an outwardly directed horizontal flange at the top of said axle plate, an opening in said flange, a bolt rigidly secured thereto and projecting through the opening in said flattened portion, a spring surrounding said bolt between the flange and the flattened portion, and means on said bolt for limiting the distance between said flattened portion and said flange.

2. A bracing frame comprising two triangles one of which includes a portion of the rear fork-member, a member (52) at right angles to said last named member, and a diagonal member (110) joining the lower end of the last named member and the upper end of the rear fork-member, the second triangle comprising the diagonal member, one side of the main frame (10) and a tension member (114), a lower fork-member (214) pivotally connected to said bracing frame, an axle plate attached thereto, an outwardly extending horizontal flange on the top of said axle plate, and spring means between said flange and the rear end of the upper rear fork-member.

3. A bracing frame consisting of two triangles having one side formed by a common compression member (110), the other two sides of one triangle being formed by a tension member (52) and a compression member (12), the other two sides of the other triangle being formed by a compression member (10) and a tension member (114), a lower fork member (214) pivotally connected to said bracing frame near one end of the common compression member, an upper fork member forming an extension of the second named compression member (12), and spring means between the lower and the upper fork members.

In testimony whereof I affix my signature.

MARIO L. PREVITALI.