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PATENTED APR. 7, 1903.

J. HUNTER.
SPRING FRAME FOR BICYCLES.

APPLICATION FILED JAN. 7, 1901.

NO MODEL.

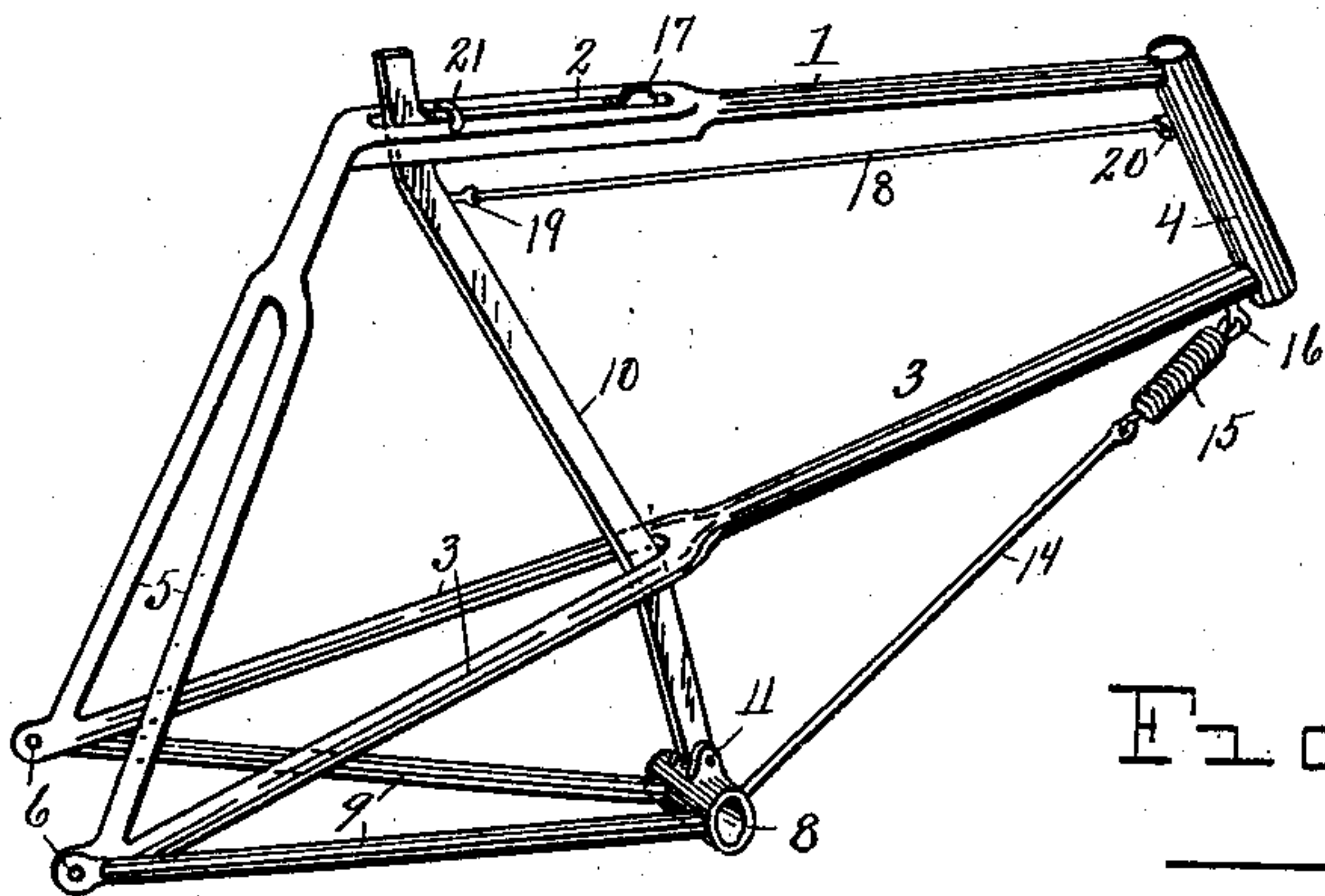


Fig. 1.

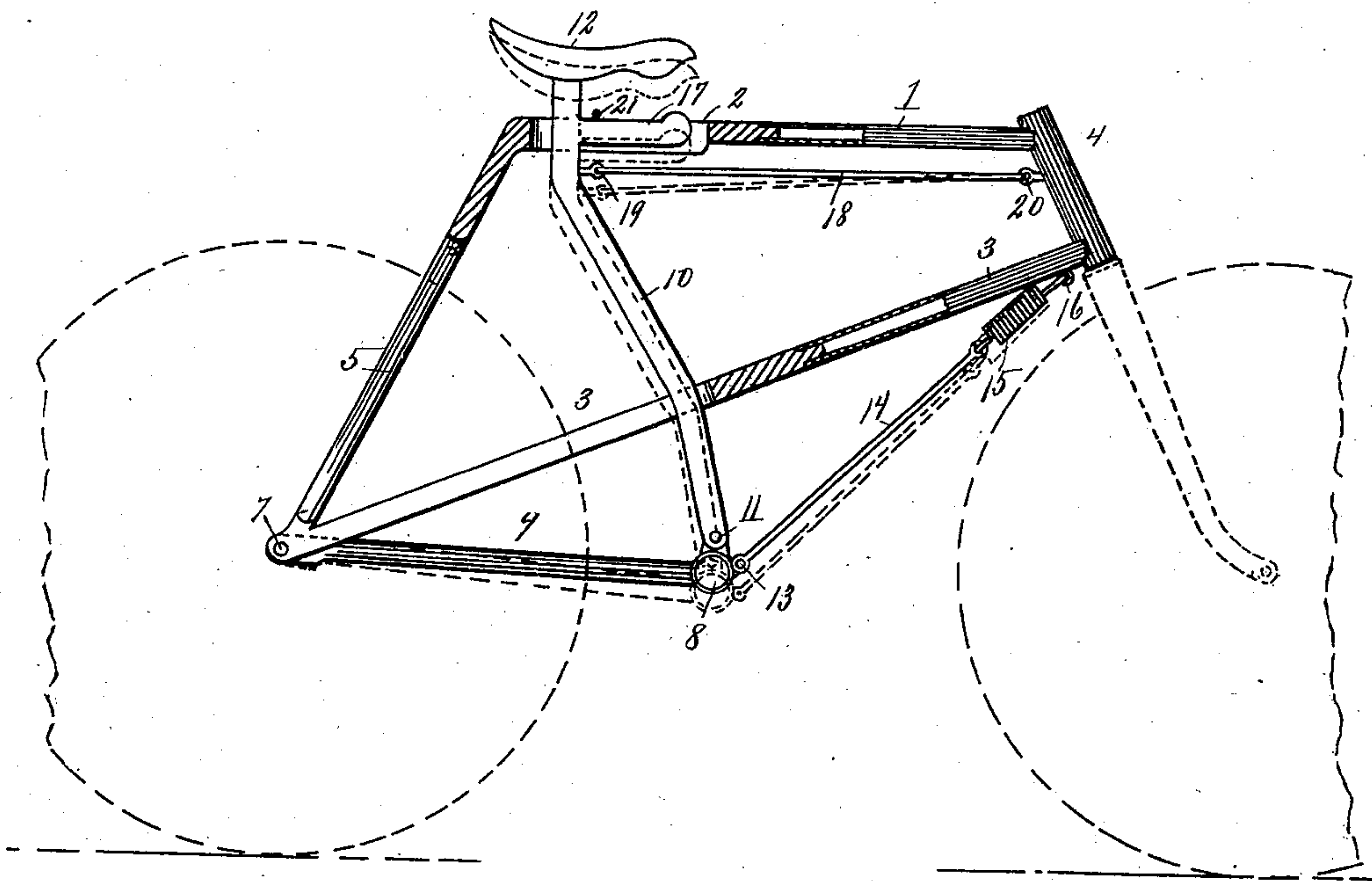


Fig. 2.

WITNESSES.

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SPRING-FRAME FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 724,871, dated April 7, 1903.

Application filed January 7, 1901. Serial No. 42,284. (No model.)

To all whom it may concern:

Be it known that I, JAMES HUNTER, a citizen of the Dominion of Canada, residing at Detroit, in the county of Wayne, State of Michigan, have invented new and useful Improvements in Spring-Frames for Bicycles; 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 figures of reference marked thereon, which form a part of this specification.

This invention relates to spring-frames for bicycles; and it consists in the construction and arrangement of parts hereinafter fully set forth, and pointed out particularly in the claims.

The object of the invention is to provide a bicycle-frame in which the arrangement is such that the rider is practically suspended upon a spring-support, so as to be relieved of the jar and vibration of the wheels.

The above object is attained by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a bicycle-frame embodying my invention. Fig. 2 is a side elevation of said frame, parts being in section and the front fork and transporting-wheels being shown by dotted lines.

Referring to the characters of reference, 1 designates the upper bar of a bicycle-frame, which is provided near its rear end with a vertical longitudinal slot 2. A bifurcated inclined truss-rod 3 extends from the steering-head 4 to the lower ends 5 of the rear fork, said parts at their point of union being apertured, as at 6, to receive the rear axle 7. The crank-hanger 8 is supported by the rear stays 9, which extend rearwardly and are mounted upon the rear axle. The seat-mast 10 is pivoted at 11 to the crank-hanger and extends upwardly between the forks of the truss-rod 3 and through the slot 2 in the upper bar, the upper end of said seat-mast carrying the saddle 12.

Pivoted at 13 to the crank-hanger is a rod 14, which extends obliquely upward and carries at its upper end a strong coiled spring 15,

which is in turn attached to the truss-rod 3, as at 16.

The strength of the spring 15 is sufficient to balance the weight of the rider, so that when seated on the saddle the rider is practically suspended by said spring and either the front or the rear wheel is allowed to rise and fall without imparting the movement to the saddle. The rear stays 9 are pivoted to the axle, so that the saddle and seat-mast may have a free vertical movement independent of the remaining portion of the frame. By reason of the fact that the seat-mast is pivotally connected with the crank-hanger the vertical movement of said mast does not change the relation between the saddle and pedals. (Not shown.)

Projecting laterally from the seat-mast is a guide-plate 17, which lies in the horizontal slot 2 in the upper bar of said frame and prevents a possible twisting and binding of the seat-mast in said slot by affording a broad bearing-surface. To guide the seat-mast in its vertical movement, a small rod 18 is employed, one end of which is pivotally attached at 19 to the seat-mast and the other end is similarly attached at 20 to the steering-head, whereby said mast is directed in its vertical movement and prevented from coming forcibly into contact with the terminals of said slot, insuring to the seat-mast perfect freedom of movement.

Crossing the slot 2, above the guide-plate 17, projecting from the seat-mast, is a loop 21, adapted to engage said plate and prevent it from coming entirely out of said slot through an unusual vertical movement of the seat-mast.

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

1. In a bicycle-frame, the combination of the rigid bars describing a quadrangular figure, the upper of said bars being slotted, and the lower of said bars being forked, a vertically-movable seat-mast passing through the slot of the upper bar and between the sides of the fork of the lower bar, a crank-hanger to which the lower end of the seat-mast is pivoted, rear stays secured rigidly to the crank-hanger, and pivoted at their rear ends

to the rigid bar of the frame, and a spring-rod pivoted to the crank-hanger, and connected to the forward end of the rigid frame.

2. A bicycle - frame, comprising permanently-united bars which describe a quadrangular figure, the lower and rear bars of the frame being forked, and having their forked ends rigidly united, the upper bar having a longitudinal slot therein, a crank-hanger, a spring-rod suspending said crank-hanger from the rigid part of the frame, a vertically-movable seat-mast pivoted to the crank-hanger, and lying in the slot in the upper bar, and a guide-rod pivoted to the forward end of the frame, and to the seat-mast.

3. A bicycle-frame comprising an upper horizontal bar and the rearwardly and downwardly extending fork-bar rigidly united, a longitudinal slot through the horizontal bar forward of the point of junction of the rear forked bar therewith, a steering-head attached to the upper bar, an oblique truss-bar extending from the lower end of the steering-head directly to the lower ends of the rear forks, and formed integral therewith, a crank-

hanger, rear stays made fast to the crank-hanger at their forward ends and pivoted at their rear ends to the point of junction between the rear fork and the fork of the truss-bar, a vertically-movable seat-mast passing through the slot of the upper bar, the fork of the truss, and pivoted at its lower end to the crank-hanger, a rod pivoted to the forward side of the crank-hanger, and a spring attached to the upper end of said rod and to the frame near the steering-head.

4. In a bicycle-frame, the combination of the upper bar having an oblong slot there-through, a vertically-movable seat-mast passing through said slot, said mast having a projecting plate adapted to lie in said slot and means for applying a spring tension to said seat-mast.

In testimony whereof I sign this specification in the presence of two witnesses.

JAMES HUNTER.

Witnesses:

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