

J. M. MICHAELSON.
MOTOR CYCLE FRAME.
APPLICATION FILED FEB. 23, 1912.

1,047,431.

Patented Dec. 17, 1912.

Fig. 1

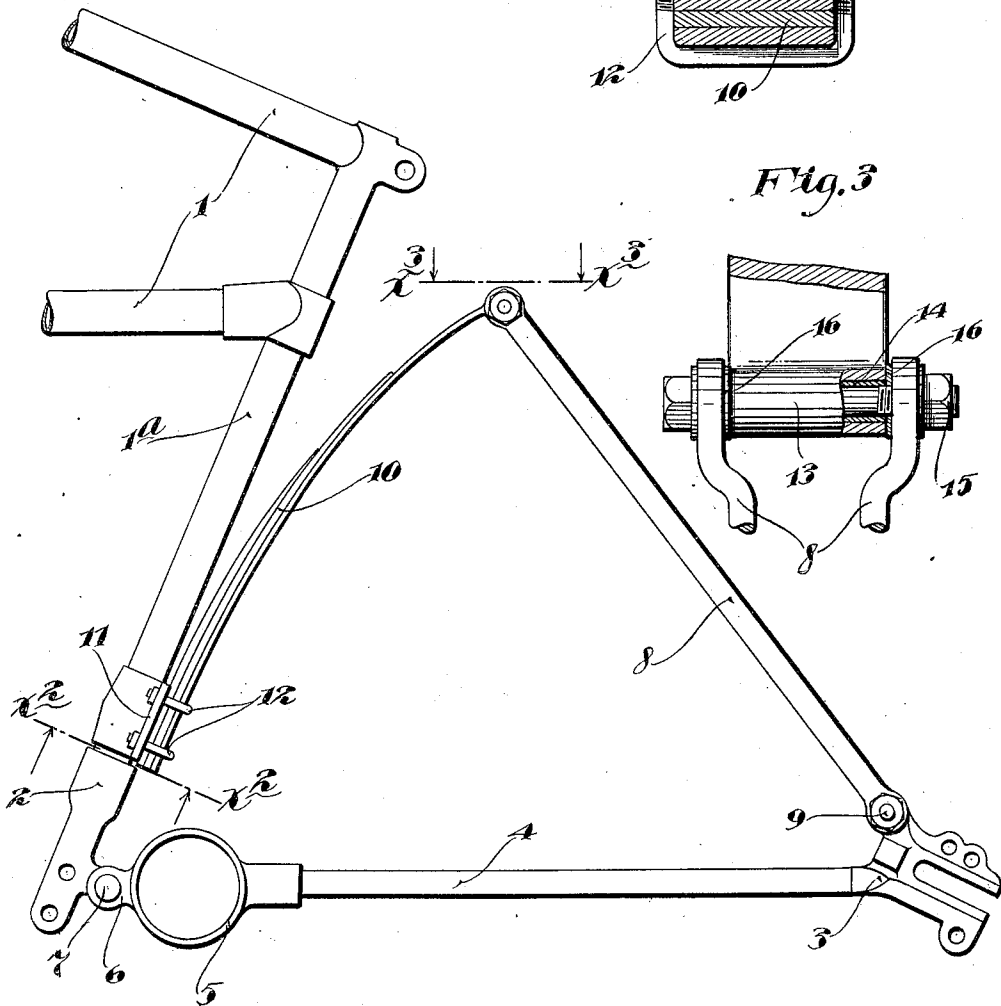


Fig. 2

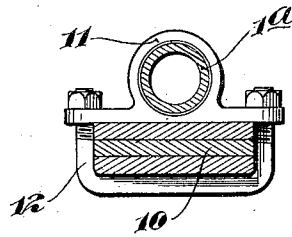
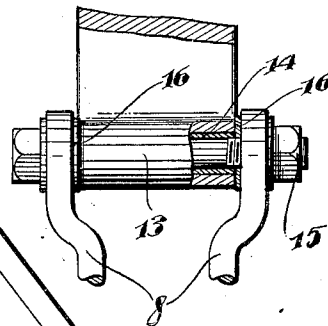


Fig. 3



Witnesses:
E. C. Skinkle
Geo. H. Hutton

Inventor:
Joseph M. Michaelson
By his Attorneys:
William M. Murchand

UNITED STATES PATENT OFFICE.

JOSEPH M. MICHAELSON, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO MINNEAPOLIS MOTOR COMPANY, OF MINNEAPOLIS, MINNESOTA, A CORPORATION OF MINNESOTA.

MOTOR-CYCLE FRAME.

1,047,431.

Specification of Letters Patent.

Patented Dec. 17, 1912.

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To all whom it may concern:

Be it known that I, JOSEPH M. MICHAELSON, 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 Motor-Cycle Frames; 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 has for its object to provide a cycle frame, to-wit, a motor cycle or bicycle frame, of simplified and improved construction, having the desired resilience, and at the same time being strong and durable.

To the above ends, generally stated, 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, illustrating my invention incorporated in a motor cycle or bicycle frame; Fig. 2 is a detail in transverse section taken on the line $x^2 x^2$ on Fig. 1; and Fig. 3 is a detail in plan, showing parts in the vicinity of the line marked $x^3 x^3$ on Fig. 1, some portions being broken away.

The main or front section 1 of the machine frame may be of the usual or any suitable construction, but the seat post tube 1^a thereof, is preferably provided at its lower end with a rigidly secured head 2. The rear frame section involves the usual rear forks 3 secured to the rear ends of the usual laterally spaced horizontal tubes 4. The front ends of the tubes 4 are secured to rearwardly projecting sleeves of a crank shaft casing 5 provided with forwardly projecting lugs 6 pivotally connected by a pin or bolt 7 to the lower end head 2 of the seat post tube 1^a. The customary inclined upper tubes 8 are, at their lower ends, pivotally connected to the rear forks 3, preferably by short bolts 9.

My invention consists in securing a laterally resilient arm or leaf spring 10 to the seat post tube 1^a at its lower end and in connecting the free upper end of the said arm or spring to the upper ends of the inclined tubes 8. The spring arm 10 is preferably

made up of a multiplicity of flat spring leaves of varying lengths, whereby the said arm is given increasing resilience toward its free end, and is made practically unyielding at its lower end. Otherwise stated, the spring arm 10 is substantially such as would be obtained by cutting an ordinary elliptical spring in two at its longitudinal center. The spring arm, at its lower end, is conveniently attached to the seat post tube 1^a by a coupling bracket 11, the sleeve of which is welded, braced, or otherwise rigidly secured on the lower portion of the seat post tube 1^a. The butt or lower end of the spring arm 10 is then detachably but rigidly fastened to the projecting flanges of the bracket 11 by nut-equipped U-bolts 12. The spring arm 10 is formed with a sleeve 13 at its extreme upper end and preferably a spacing sleeve 14 is loosely inserted in the said sleeve 13. A nut-equipped bolt 15 is passed directly through the sleeves 14 and through the flattened and perforated upper ends of the tubes 8. Preferably, washers 16 are interposed between the ends of the spacing sleeve 14 and the upper ends of the tubes 8. When the nut on the bolt 15 is tightened, the washer 16 will be tightly pressed against the ends of the spacing sleeve 14 but will leave the ends of the sleeve 13 free for pivotal movements on said bolt.

As is evident, the above described construction is extremely simple and has no parts that are easy to get out of order; all of the various coiled springs and cooperating spring casings and cooperating bolts and plungers usually employed are eliminated by the use of the spring arm or member 10. Furthermore, the laterally yielding spring arm used as one of the elements of the frame structure proper gives a very much desired resilience and makes the machine easy to ride even over the roughest road.

What I claim is:

1. In a cycle frame, the combination with lower and inclined upper rear frame tubes, of rear forks rigidly secured to one of said classes of tubes and pivotally connected to the other, a main frame having a seat post tube to which said lower rear tubes are pivotally attached, a crank shaft hanger carried by said latter tubes, and a laterally yielding spring arm secured at its lower end to said

seat post tube and pivotally connected at its upper end to the upper ends of said rear inclined upper tubes.

2. In a cycle frame, the combination with
5 a main front frame section having a seat post tube, of a coupling bracket rigidly secured to the lower portion of said seat post tube and having projecting flanges, a laterally yielding arm made up of a plurality of
10 spring leaves of unequal length, rigidly clamped together at their lower ends and to the said coupling bracket, by means of nut-equipped U-bolts, and a supplemental rear

frame section comprising rear forks, a crank shaft hanger, lower tubes rigidly secured to said crank shaft hanger and rear forks, and inclined tubes pivotally connected to said rear forks at their lower ends and pivotally connected at their upper ends to the free upper end of said laterally yielding arm. 15 20

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

JOSEPH M. MICHAELSON.

Witnesses:

EDITH SIMERMAN,
HARRY D. KILGORE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."