

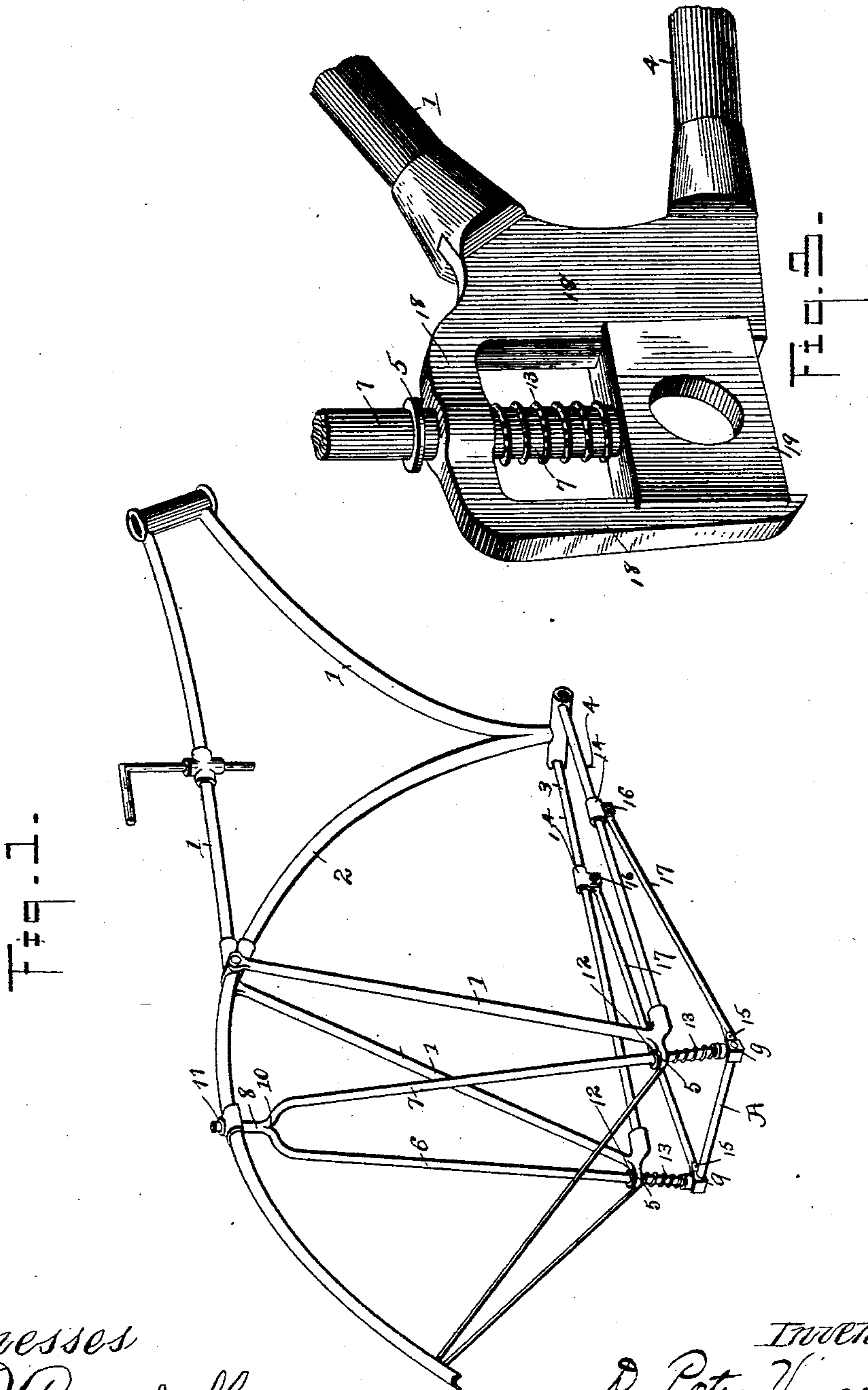
(No Model.)

2 Sheets—Sheet 1.

D. P. VINCENT.
BICYCLE.

No. 455,673.

Patented July 7, 1891.



Witnesses
J. P. Cornwall
R. H. Bishop

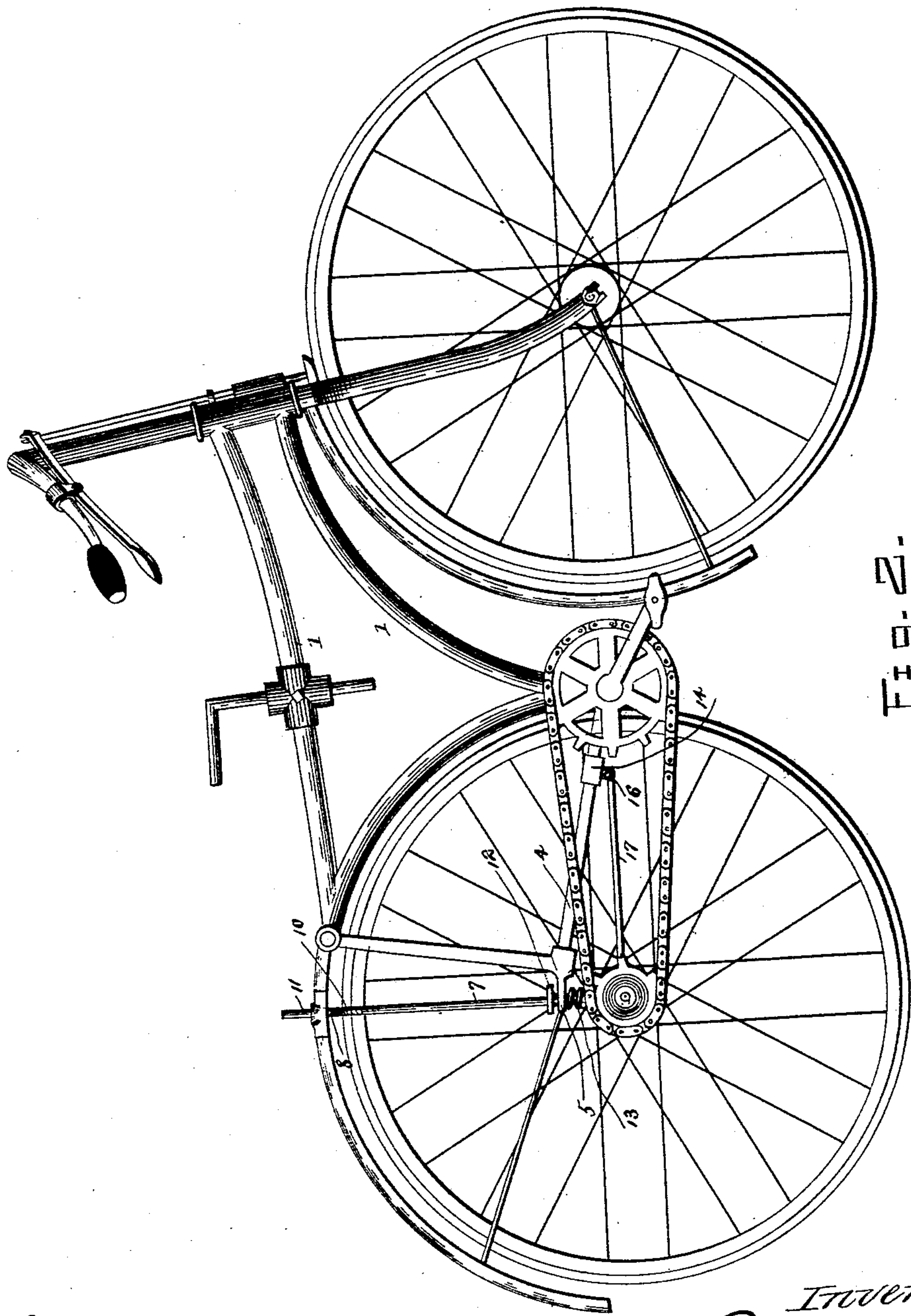
Inventor
D. Pater Vincent
by W. E. Humphreys
Attorney.

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D. Porter Vincent
by H. E. Laughlin
his Atty.

UNITED STATES PATENT OFFICE.

DAVID PORTER VINCENT, OF OIL CITY, PENNSYLVANIA.

BICYCLE.

SPECIFICATION forming part of Letters Patent No. 455,673, dated July 7, 1891.

Application filed February 18, 1891. Serial No. 381,782. (No model.)

To all whom it may concern:

Be it known that I, DAVID PORTER VINCENT, a citizen of the United States, residing at Oil City, in the county of Venango and State of Pennsylvania, have invented certain new and useful Improvements in Bicycles; 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 relation to an improvement in bicycles; and my object is to provide a bicycle-frame of such construction that it will take up and successfully resist all jars and jolts to which it may be subjected during riding, at the same time serving to give greater elasticity to the frame of the machine and adding to its strength.

I accomplish my object by the means shown in the accompanying drawings, in which—

Figure 1 is a perspective view of a bicycle-frame provided with my improvement. Fig. 2 represents my improvement applied to an ordinary Safety bicycle.

Referring to the drawings annexed, the numeral 1 represents an ordinary Safety frame, having the usual rear-wheel mud-guard 2 and frame-rods 3 and 4. Ordinarily each set of frame-rods 3 4 were joined together at their lower ends in such a manner as to form yokes at the point of union of each set of rods, said yokes being adapted to fit on the axle of the rear wheel of the bicycle.

So far herein I have been describing prior constructions, and my present invention differs from that hereinbefore described, in that at the point of union of the frame-rods 3 4 instead of having the yoke bearing upon the axle I provide at said points perforated offsets 5 5, as shown in the drawings. Through said offsets 5 5 the arms 6 and 7 of the yoke 8 are adapted to slide vertically. These arms 6 7, as well as all the other portions of my improvement to be hereinafter described, may be made of some suitable material, such as spring metal, or may be made of hollow steel tubing, as desired. Each of the said arms 6 7 are provided at their lower extremities with suitable bearings 9 9 for the axle A of the

rear wheel of the bicycle. At the upper extremity of the yoke 8 the arms 6 7 are suitably secured together, as at 10, and project, as at 11, through an opening of appropriate size in the top of the rear-wheel mud-guard, as plainly shown in the drawings. As is exceedingly obvious, the arms 6 7 may extend up through suitable guides on either side of the mud-guard, and then be secured together above the said mud-guard without in the least departing from the spirit of my invention.

The numeral 12 indicates suitable buffers, preferably adjustably secured on each of the said arms 6 7 of the yoke 8, said buffers being adapted to act as stops for the offsets 5 5 of the frame-rods when pressed upwardly (owing to a jar or jolt received during riding) through the medium of the coiled springs 13 13, which, as shown, are wrapped around both arms 6 7 of the yoke 8 between the bearings 9 9 of the axle A and the offset portions 5 5 of the bicycle-frame. As is apparent, any convenient or suitable form of spring may be employed, such as a flat spring; or the location of the spring may be changed, if advantageous, to the point where the brace-rods 6 7 are secured together.

On each of the frame-rods 4 4 I provide a suitable sliding-sleeve coupling 14 14. Jointed to the sliding coupling 14 14 and to one side of the bearings 9 9, as shown, respectively, at points 15 15 and 16 16, are two brace-rods 17 17 at each side of the frame.

In Fig. 3 I have illustrated a modification of my device, in which figure the numerals 1 and 4 represent, respectively, the frame and brace rods of the bicycle. These rods terminate in inverted-U-shaped guideways 18, in which slide vertically the bearing-blocks 19 for the axle A. Above said bearing-block 19 and suitably secured to said block is one arm 7 of the yoke 8, around which a spring 13 is wrapped, as shown. As is obvious, I have illustrated but one side of a machine provided with this modification, the other side being a duplicate.

From the above description, taken in connection with the accompanying drawings, it will be readily seen that any jar the wheel of

the bicycle may receive—such, for instance, as coming in contact with a stone or a rut in the road—will be taken up through the medium of the springs 13 13, brace-rods 17 17, and spring-arms 6 7, and will be equally distributed thereon without being communicated to the frame of the machine or the rider. Obviously by altering the parts slightly they may be used on the front wheel of the bicycle with equally good results, or may be used on both wheels together.

It will be seen that my device while being cheap to manufacture, durable in use, and handsome in appearance also tends to make the rider more graceful and comfortable, and at the same time protects in a thorough manner the frame of the bicycle from jolts and sudden jars, which always have more or less tendency to loosen the various parts of the machine.

Having thus fully described my invention, what I claim herein as new and of my own invention is—

1. In a bicycle, the mud-guard and a yoke the under portion of which rests upon the axle and the upper portion of which plays through said mud-guard, in combination with the rods of the frame, connected to said yoke, and a spring or springs on the yoke, as shown.

2. In a bicycle, a yoke the under portion of which rests upon the axle, in combination with the rods of the frame, connected to said yoke, a spring on the yoke, and brace-

rods connected with the said yoke and the frame-rods, as set forth.

3. In a bicycle, a yoke the under portion of which rests upon the axle, in combination with the rods of the frame connected to said yoke, a spring or springs on the yoke, buffers on said yoke, and rods connected to the yoke-bearings and to the frame-rods, as set forth.

4. In a bicycle, the combination of a spring-seated frame and a yoke the upper portion of which has an extension projecting through a suitable opening in the mud-guard, as set forth.

5. In a bicycle, a spring-seated frame, a yoke the arms of which pass through said frame and are provided at their lower extremities with bearings resting upon the axle, and the upper portion of which yoke is guided by the wheel-guard, and brace-rods jointed to the bearings of the yoke and to collars on the frame-rods, as set forth.

6. In a bicycle, a spring-seated frame, a yoke the arms of which pass through said frame and rest upon the axle, stops or buffers on the upper and lower portions of the yoke, and brace-rods connected to the lower portion of the yoke and to the frame-rods, as set forth.

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

D. PORTER VINCENT.

Witnesses:

W. B. FILSON,

F. N. CHAMBERS.