

(No Model.)

J. SHIER.
BICYCLE.

No. 453,514.

Patented June 2, 1891.

Fig. 1.

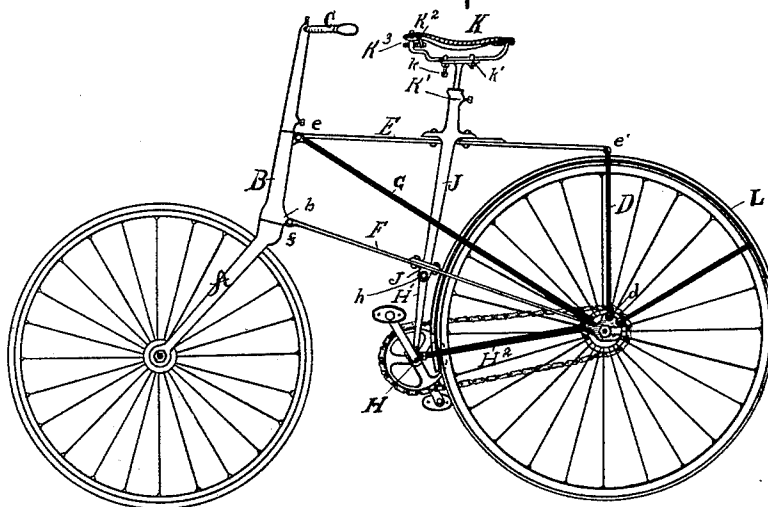
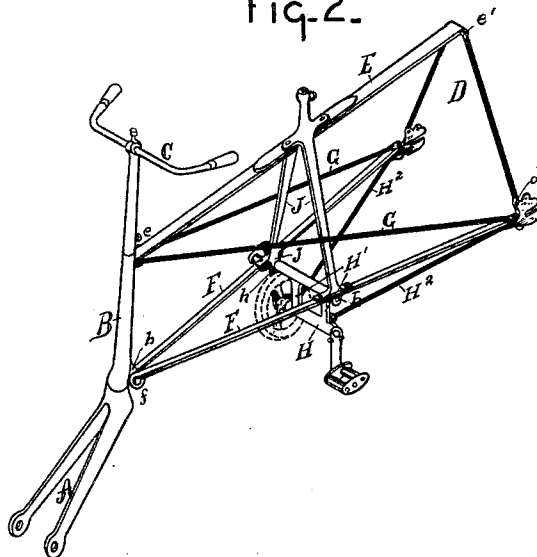


Fig-2.



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN SHIER, OF DETROIT, MICHIGAN, ASSIGNOR OF ONE-THIRD TO FREDERICK LEADBEATER, OF SAME PLACE.

BICYCLE.

SPECIFICATION forming part of Letters Patent No. 453,514, dated June 2, 1891.

Application filed March 13, 1891. Serial No. 384,927. (No model.)

To all whom it may concern:

Be it known that I, JOHN SHIER, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Bicycles; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

In the drawings, Figure 1 is a side elevation of a bicycle embodying my invention. Fig. 2 is a perspective view of the frame-work without the wheels.

It is the purpose of my invention to improve a bicycle-frame whereby it is rendered of simpler and more effective construction, is rendered more yielding and easy for the rider, its parts are not subjected to strains which are liable to derange the same or cause it to be wrenched or injured, and in other special features of construction, all of which are herein-after more particularly described, and pointed out in the claims.

In carrying out my invention A, represents the yoke, which embraces the forward axle; B, the upright standard in which it is journaled; C, the handle; D, the yoke embracing the rear axle, and E a spring joining the top of the yoke D with the upper end of the standard.

F represents springs extending from the lower end of the standard to the extremities of the rear axle.

G represents brace-rods extending from the rear axle diagonally to the top of the standard B.

The spring E and the brace-rods G are pivoted to the standard at their union therewith, and the springs F are likewise pivoted to the standard at their union therewith. The top spring E is likewise pivoted to the top of the yoke D.

H is the treadle-axle supported by the uprights H' and braces H², and the upper ends of the uprights H' are pivoted to the seat-frame J. This seat-frame J bears upon and is engaged with the springs E and F.

K is the seat, made adjustable in the frame by a set-screw or equivalent K'.

K² is a movable block or support, to which the forward end of the seat-leather is attached, and this is made adjustable, so as to stretch the said leather, when desired, by a set-screw K³.

It is manifest that the brace and rods G, in conjunction with the lower springs F and the standard B, constitute a triangle, which maintains the upright always in its proper position, while at the same time the pivotal connections at *e* and *f* remove from these points of union any tendency to wrench or strain the parts as the springs flex up and down. Again, the seat resting upon the springs E and F, the springs yield readily and easily and make the implement a very easy rider. So, also, the pivotal connection at *e'* with the rear yoke D permits an easy flexing of the parts at this point without any wrenching strain. Then, again, the frame H' H² being connected at *h* by a pivotal connection with the seat-frame J, there is no binding or wrenching of the parts at this point, as the springs E and F flex up and down, and the treadle-axle is always maintained in its proper relation to the axle of the rear-wheel and to the seat K.

A velocipede of this construction is exceedingly simple. Any one of its parts if injured or broken can be easily replaced, and the whole device is rendered not only very effective but simple, inexpensive, and durable. It may be provided with any of the usual appliances for taking up wear at its journals and other wearing parts and for aligning the wheels, these features constituting no essential part of my invention.

An adjusting-screw *k* may be employed for tilting the seat to any desired angle, the same being used in connection with the clips *k'*.

The springs F may be engaged at their forward ends by any convenient pivotal mechanism; but I prefer that the standard B be formed with a lug *b*, having an eye, and that the springs be formed with corresponding eyes, so that one spring shall be bound upon one side of the lug *b* and the other spring upon the other side of the lug, and the whole be

held together by a common pivot-bolt. These pivoted connections may all be provided with conical bolts, if desired, to take up wear or lost motion, and this may be done at all the 5 points *e, e', f, and h*, and like provision may be had at the pivot *d*, where the rear yoke is engaged adjacent to the rear axle.

The implement may or may not be provided with the usual guard *L*.

10 What I claim is—

1. In a velocipede, the combination, with the standard *B* and the axle, of the yoke *D*, brace-rods *G*, and springs *E F*, and a seat with its seat-frame engaged with and bearing 15 upon the springs *E F*, substantially as described.

2. In a velocipede, the combination, with the standard *B* and yoke *D*, of the springs *E F*, braces *G*, a seat engaged with and supported 20 by said springs *E F*, and a pedal-shaft frame engaged to the frame adjacent to the rear axle and to the seat-frame, whereby it will maintain a fixed relation with the rear axle and the seat, substantially as described.

25 3. In a velocipede, the combination, with the standard *B* and yoke *D*, of the springs *E*

F and brace-rods *G*, said springs *E F* adapted to receive and support the seat, said parts *E, F, and G* pivoted to the said standard, substantially as and for the purposes described. 30

4. The combination, with the standard, of the springs *E F* and braces *G*, pivoted thereto, and the pedal-frame likewise pivoted at *h*, substantially as and for the purposes described.

5. A velocipede consisting of a forward and 35 a rear wheel, the yoke *A*, with its handles, standard *B* and yoke *D*, and in connection therewith the springs *E F*, braces *G*, a seat supported on and sustained thereby, and a treadle-supporting frame engaged with the 40 seat-frame, substantially as and for the purposes described.

6. The combination, with the standard *B*, the springs *E F*, and brace-rods *G*, of the yoke *D*, pivoted at its upper and lower ends, sub- 45 stantially as described.

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

JOHN SHIER.

Witnesses:

M. A. REEVE,

DELL J. BROWNE.