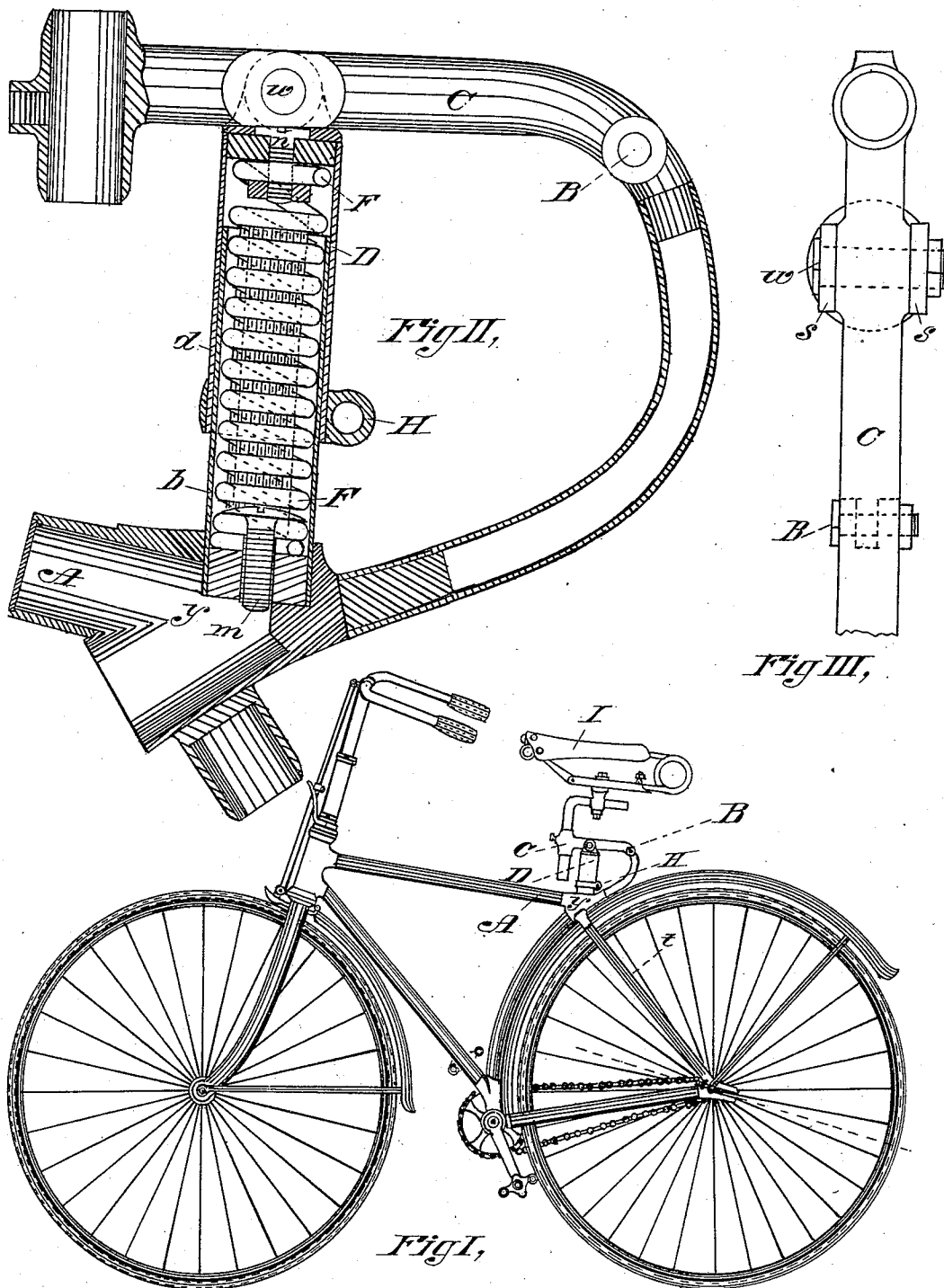


(No Model.)

J. D. KEATING.  
VELOCIPÈDE.

No. 465,934.

Patented Dec. 29, 1891.



Witnessed,  
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# UNITED STATES PATENT OFFICE.

JOHN D. KEATING, OF SPRINGFIELD, MASSACHUSETTS.

## VELOCIPEDE.

SPECIFICATION forming part of Letters Patent No. 465,934, dated December 29, 1891.

Application filed May 1, 1891. Serial No. 391,293. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN D. KEATING, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented a new and useful Improvement in Velocipedes, of which the following is a specification.

My improvements relate to the saddle-support and have for their object the provision of easier seat for the rider; and the invention consists in the combination and construction, as hereinafter described, and more particularly pointed out in the claims.

My invention is fully illustrated in the accompanying drawings, in which—

Figure I is a side elevation of a complete velocipede having my improvements. Fig. II is an enlarged side elevation, in partial section, of my device; and Fig. III is an enlarged detail view of the same.

In the drawings, the backbone A is shown prolonged from the rear fork in the plane of the rear wheel backward and upward, to be joined at the end of such extension by a hinge B to the end of a horizontal arm C of the saddle-post, lying in the same plane. The hinge B is to the rear of the center of gravity of the saddle I and interposed between the arm C and the backbone A, and approximately under the center of gravity of the loaded saddle is a vertical spring-cushion D, secured at its ends, respectively, to the arm C and backbone A, so that the weighted saddle tied to said cushion becomes a lever, having the hinge B for its fulcrum. The cushion D is formed of two telescopic tubular sections *b d*. The lower one *b* is rigidly attached at its lower end to the backbone A and the upper one *d* is hinged at its upper end to the arm C, so as to permit the two to reciprocate when the arm C swings upon the hinge B, and between the two ends of the tube formed by the sections *b d* and made fast at its two ends to the corresponding inner ends of the sections is a coil-spring F, which from this arrangement becomes a double-acting spring to restore the saddle from a vertical deflection in either direction. Around the section *d* is a split clamp H, by means of which the two sections *b d*

may be clamped together when it is desired to make of the cushion D a rigid support.

In this device the leverage exerted by the saddle upon the coil-spring enables such a strong spring to be used that its action in both directions is insured, with the result of a perfectly uniform and easy motion to the rider, as the result of any jolt to the wheels.

In construction I prefer, as shown in Fig. II, in the socket *y*, receiving the end of the backbone A and ends of braces *t t*, forming the rear fork, to braze the lower section *b* of cushion D and fill up its end with a solid plug of soft metal, into which passes the screw *m* to firmly hold the adjacent end of coil-spring F. The upper end of section *d* is also filled with a solid plug to afford a firm hold to screw *n*, securing the other end of said spring, and said screw may extend in either direction through said plug.

The hinge of section *d* to arm C is preferably formed, as shown in Fig. III, of two wings or side flanges *s s*, inclosing a flattened surface of arm C, and held thereto by a hinge-bolt *w*. The hinge *b*, as shown, is preferably slightly below the top of section *d* of the cushion. The extension affording the lever-hinge for arm C may be a tube stiffened to any required degree by filling.

Now having described my invention, what I claim is—

1. In velocipedes, a rearward and upward prolongation of the backbone, a horizontal arm of the saddle-post, a hinge formed of their adjacent ends in rear of the center of gravity of the saddle, and a spring-cushion interposed forward of said hinge between the saddle-post arm and the backbone, and consisting of telescopic sections, one of which is rigid with the backbone and the other hinged to the saddle-post arm, and an inclosed coil-spring having its ends respectively fixed to the inner ends of the telescopic sections, all combined and operating substantially as and for the purpose described.

2. In velocipedes, a rearward-extending arm of the backbone and a rearward-extending arm of the saddle-post, hinged at their adjacent ends back of the center of gravity of the

saddle, a spring-cushion interposed forward of said hinge between the fixed frame and the horizontal arm of the saddle-post, and consisting of telescopic sections, one of which  
5 is fast to the fixed frame and the other hinged to the saddle-post arm, with an inclosed coil-spring fixed at opposite ends to the telescopic sections, and a clamp encircling the outer section for binding the two together, all combined and operating as set forth.

JOHN D. KEATING.

Witnesses:

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