

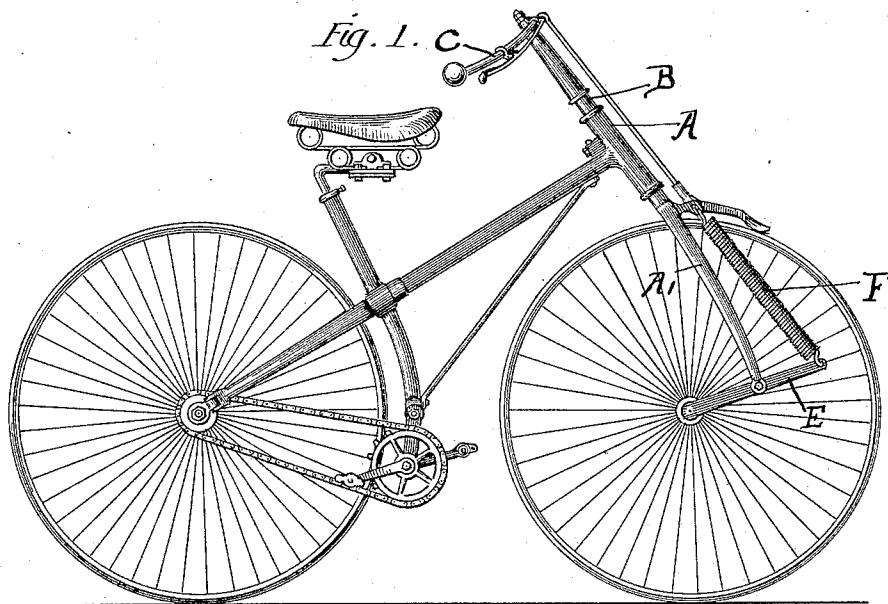
(No Model.)

T. B. JEFFERY.

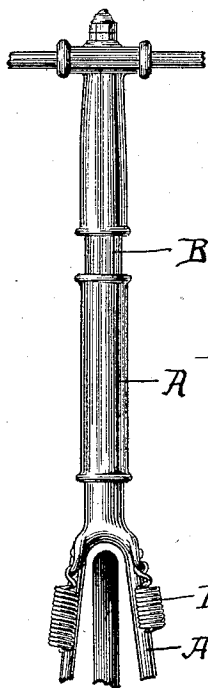
VELOCIPÈDE.

No. 395,147.

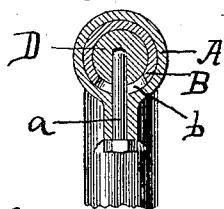
Patented Dec. 25, 1888.



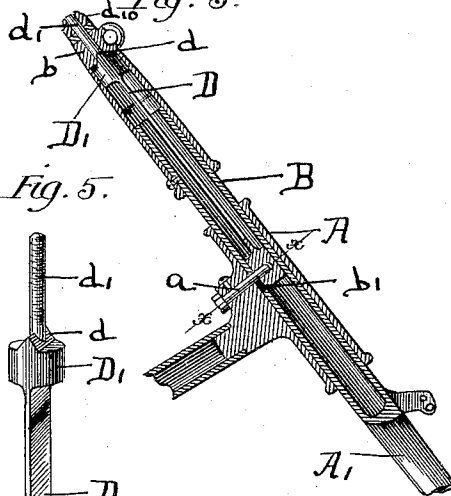
*Fig. 2.*



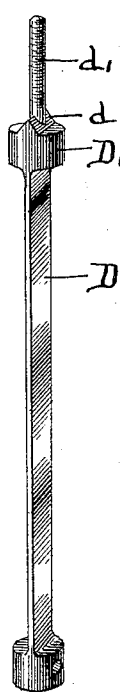
*Fig. 4.*



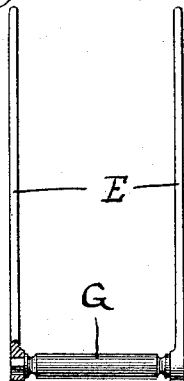
*Fig. 3.*



*Fig. 5.*



*Fig. 6.*



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# UNITED STATES PATENT OFFICE.

THOMAS B. JEFFERY, OF RAVENSWOOD, ILLINOIS.

## VELOCIPEDE.

SPECIFICATION forming part of Letters Patent No. 395,147, dated December 25, 1888.

Application filed January 13, 1888. Serial No. 260,612. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS B. JEFFERY, a citizen of the United States, residing at Ravenswood, county of Cook and State of Illinois, have invented certain new and useful Improvements in Velocipedes, which are fully set forth in the following specification, reference being had to the accompanying drawings, forming part thereof.

Figure 1 is a side elevation of a velocipede embodying my invention. Fig. 2 is a front elevation of same. Fig. 3 is a vertical section of the steering-head and neck. Fig. 4 is a cross-section through the steering-head and neck at *xx*, Fig. 2. Fig. 5 is a detail of the torsion-spring D. Fig. 6 is a detail of the frame formed by the arms E E and cross-bar G.

A is the steering-head; B, the neck, terminating at its lower end in the forks A' A', and turns freely in the head.

C is the handle-bar secured to the neck.

Within the neck is the torsion-spring D, having at its upper end the bolt *d'*, which passes through the top part, *b*, of the neck, and is provided with the nut or nuts *d''*. Between the spring proper and the bolt I provide, to add strength, a thickened part, D', which has on its upper side a transverse ridge or projection, *d*, and in the lower side of the part *b* of the neck I provide a corresponding depression, so that the spring can be drawn up by tightening the nuts *d''* and be in engagement with the neck, or can be let down out of engagement by loosening the nuts. The lower end of the spring D is also thickened and secured to the steering-head by means of the screw *a*, which passes through the slot *b'* in the neck, this slot being wide enough to allow the neck to be turned as far as necessary in steering and deep enough to allow the steering-head and spring to drop a sufficient distance to throw the projection *d* out of engagement with the neck. It will thus be seen that the spring D is supported by the neck and in turn supports the steering-head, backbone, and consequently the rider's weight, and when it is let down so that the projection *d* is out of engagement with the neck its office is simply that of a supporting-rod. When, however, it is drawn up by the nuts *d''* into engagement

with the neck, the upper end, D', must follow the motion of the neck when the latter is turned in steering, while the lower end is prevented from turning by its securement to the steering-head. Its tendency, therefore, will be to cause the steering-wheel and forks to align themselves with the rest of the frame and to counteract any tendency of the machine to swerve by reason of the weight of the rider depressing the top of the steering-wheel when it is inclined to either side in the action of steering, thus forming what is known as an "automatic steering device." This device also dispenses with the use of shoulders or collars to support the steering-head upon the neck, and thus avoid a large amount of friction. Such a shoulder might be provided, however, for safety, in case the spring should be broken; but should it be provided for such an emergency it would be placed a short distance below the lower edge of the head, so that there would be no friction as long as the spring held good. This device can be used either with a closed or a socketed head.

A further portion of my invention relates to the forks and hub of the steering-wheel. On each side of the wheel, extending forward or backward from the hub, I provide an arm, E, rigidly secured to the cross-piece G, the latter forming a support for the hub. To these arms, at a point away from the center of the wheel, I pivot the forks, and provide strong springs F, attached to these arms beyond the point at which the forks are pivoted thereto and to their forks, respectively, which springs react between the arms and forks. The action of this part of my device is that the weight of the steering-head, backbone, and rider thereon is thrown upon these springs, thus giving to the frame an easy elasticity, which is especially noticeable when crossing obstructions, in which case the jar is taken up entirely or almost entirely by the springs. The frame formed by these arms and the cross-piece G being rigid, whatever strain is put upon the backbone or forks is borne equally by the two springs, as neither arm can move independently of the other.

I have shown this device applied to the steering-wheel and in connection with the front forks; but I do not confine myself to its

use in such position, as it may be used on any wheel of a velocipede.

I claim—

1. In a velocipede, in combination with the steering-head and neck, a suspending-rod within and supported by the neck and connecting the steering-head to the neck, whereby the weight of the rider is supported, substantially as set forth.

2. In a velocipede, in combination with the steering-head and neck, a spring whereby the weight of the rider is supported near the axis of the head, secured to the head and to the neck and supported by the latter, substantially as and for the purpose set forth.

3. In a velocipede, in combination with the steering-head and neck, a torsion-spring secured to the neck and to the steering-head, by which the weight of the rider is supported, said spring being adjustable up and down, substantially as and for the purpose set forth.

4. In a velocipede, in combination with the neck, a torsion-spring therein secured to the steering-head supported by the neck, and adjustable so as either to engage with the neck and be turned therewith or to allow the neck to be turned independently thereof, substantially as set forth.

5. In a velocipede, in combination with the neck, a torsion-spring therein supported by the neck and supporting the steering-head and backbone, one being provided with a projection and the other with a corresponding depression, the spring being so adjustable as to be either in or out of engagement with the

neck, substantially as and for the purpose set forth.

6. In a velocipede, in combination, the neck and the torsion-spring therein, one having a depression and the other a corresponding projection adapted to engage therein, the spring thickened near one end and ending in a threaded bolt which passes through the top of the neck, and a nut whereby the spring is drawn up into engagement with the neck or let down out of engagement, substantially as set forth.

7. In a velocipede, the spring within the neck and secured thereto and also secured to the steering-head by a bolt, the neck provided with a horizontal slot through which said bolt passes to allow the neck to be turned in steering, substantially as set forth.

8. In a velocipede, in combination with the neck, a torsion-spring therein and supported thereby, one having a projection and the other a corresponding depression, the spring so adjustable as to be either in or out of engagement with the neck, and also secured to the steering-head by a set-screw, the neck being provided with a horizontal slot adapted to allow the neck to be turned in steering and to allow the steering-head to drop when the spring is out of engagement with the neck, substantially as set forth.

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Witnesses:

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