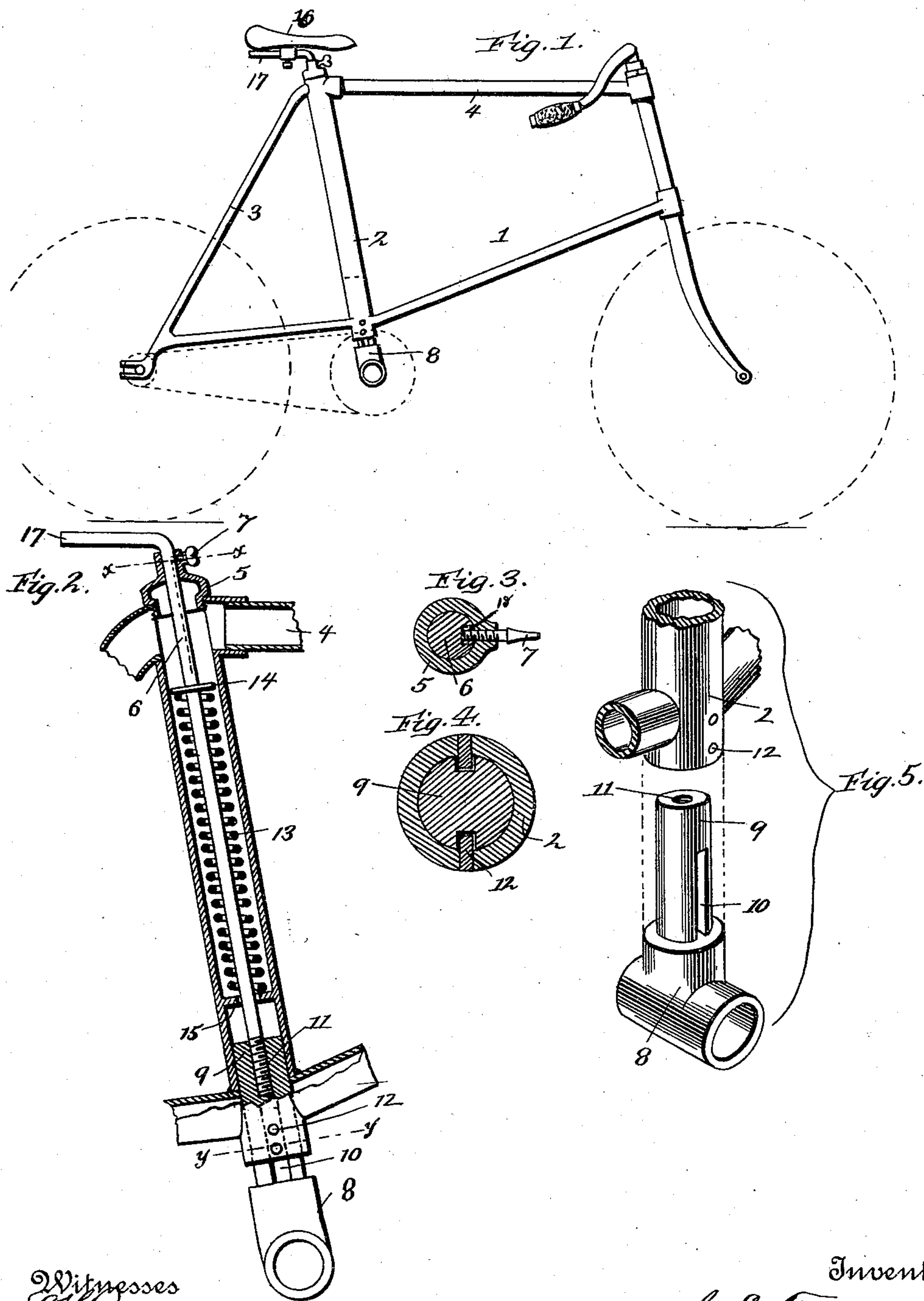


(No Model.)

C. E. FOX.
BICYCLE.

No. 578,326.

Patented Mar. 9, 1897.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES E. FOX, OF MINNEAPOLIS, MINNESOTA.

BICYCLE.

SPECIFICATION forming part of Letters Patent No. 578,326, dated March 9, 1897.

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To all whom it may concern:

Be it known that I, CHARLES E. FOX, 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 Bicycles; and I do 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 relates to improvements in velocipedes; and it has for its general object to provide a velocipede in which the crank-shaft hanger and the rider's seat are connected together and supported by a spring in or on the main frame in such manner that they will move together with respect to the main frame when the machine is traveling over a rough road, and will thereby prevent the jolting from being imparted to the rider, and at the same time will enable the rider to keep his feet upon the pedals without difficulty.

Another object of the invention is to provide a velocipede embodying the construction above described and means whereby, when desired, the rider's seat and the crank-shaft hanger may be quickly and easily fixed with respect to the main frame.

Other objects and advantages of the invention will be fully understood from the following description and claims when taken in conjunction with the accompanying drawings, in which—

Figure 1 is a side elevation of a bicycle embodying my improvements with parts removed and other parts illustrated by dotted lines. Fig. 2 is an enlarged detail section with parts in elevation, illustrating the crank-shaft hanger, the rear post or upright of the frame, the seat-post, and the cushioning-spring. Figs. 3 and 4 are detail sections taken in the planes indicated by the lines *xx* and *yy*, respectively, of Fig. 2; and Fig. 5 comprises detail perspective views of the lower portion of the rear post or upright of the frame and the crank-shaft hanger.

In the said drawings similar numerals designate corresponding parts in all of the views, referring to which—

1 indicates the frame of a bicycle, which may in general be of the ordinary form and

construction, and 2 indicates the rear post or upright of the frame. This post or upright 2 may be connected to the bars 3 and 4 of the frame in the ordinary or any approved manner, and its upper end is closed by the cap 5, which is designed for the passage of the seat-post 6, and is provided with a screw 7, designed to engage said post 6, as will be presently described.

8 indicates the crank-shaft hanger of the machine. This hanger 8 is provided with the upwardly-extending portion 9, and this portion 9, which takes into the lower end of the hollow or tubular upright 2, is provided with a groove or grooves 10, (see Fig. 4,) and is also provided in its upper end with the interiorly-threaded socket 11, as better shown in Fig. 2. The grooves 10 of the hanger portion 9 receive the guides or dowel-pins 12 of the hollow upright 2, which are designed to permit vertical movement of the hanger and its portion 9, and yet hold the same against turning in the upright. The interiorly-threaded socket 11 of the hanger portion 9 is designed to receive the lower threaded end of the post 6, as shown in Fig. 2, this adjustable connection of the post and hanger portion being provided in order that the tension of the spring 13 may be readily regulated to suit the machine to persons of different weights.

The spring 13 surrounds the post 6 within the upright 2 and is interposed between an enlargement 14 on the post and a ledge or partition 15 in the said upright 2, whereby it will be seen that it will take up all jolting and jar incident to the machine passing over a rough road and will efficiently cushion the rider mounted on the seat 16, secured to the angular portion 17 of the post 6. While the spring 13 serves efficiently to cushion the rider, it will be seen that in virtue of the connection between the rider's seat and the crank-shaft hanger the said hanger and the seat will move in concert with respect to the frame 1, and therefore the rider will have no difficulty in keeping his feet upon the pedals while traveling over a rough road. This is an important advantage and renders my improved machine superior to those machines in which the crank-shaft hanger is fixed with respect to the frame and in which the move-

ments of the spring-supported seat render it very difficult for a rider to keep his feet upon the pedals while passing over a rough road.

In order to permit vertical movement of the post 6 and yet hold it against turning, I provide the longitudinal groove 18 in the said post 6, which receives the screw 7, before described. This screw 7 may be tightened when desirable, so as to fix the post 6, and consequently the crank-shaft hanger and the rider's seat 16, with respect to the frame.

It will be seen from the foregoing that while my improvements serve efficiently to cushion a rider, and at the same time enable him to keep his feet on the pedals without difficulty, they are very simple and inexpensive and therefore will add but little to the cost of the machine.

While I have described my improvements as embodied in a safety-bicycle, I do not desire to be understood as limiting myself to such embodiment or application of the invention, as the improvements may be employed to advantage in all kinds of velocipedes. I further do not desire to be understood as confining myself to the specific construction and arrangement of parts described, as such changes or modifications may be made in practice as fairly fall within the scope of my invention.

Having described my invention, what I claim is—

1. In a velocipede the combination of a frame having a hollow upright, a shaft-hanger movable with respect to the frame and having a portion arranged in the hollow upright and provided with a threaded socket in its upper end, a post having its lower end threaded

and inserted in the threaded socket of the hanger, a seat supported by said post and a spring arranged in the hollow upright and interposed between a projection on the post and a projection on said upright, substantially as and for the purpose set forth.

2. In a velocipede the combination of a frame having a hollow upright, a shaft-hanger movable with respect to the frame and having a portion arranged in the hollow upright, a post, a seat supported by said post and a spring arranged in the hollow upright and interposed between a projection on the post and a projection on said upright; the said post being adjustably connected with the hanger whereby the tension of the spring may be regulated, substantially as and for the purpose set forth.

3. In a velocipede the combination of a frame having a hollow upright, a shaft-hanger movable with respect to the frame and having a portion arranged in the hollow upright and provided with a threaded socket in its upper end, a post having its lower end threaded and inserted in the socket of the hanger and also having a longitudinal groove; said post being designed to carry a seat, an adjustable guide carried by the frame and extending into the groove of the post, and a spring arranged in the upright and interposed between a projection on the post and a projection on the upright, substantially as specified.

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

CHARLES E. FOX.

Witnesses:

C. Z. SWAIN,
H. A. SWAIN.