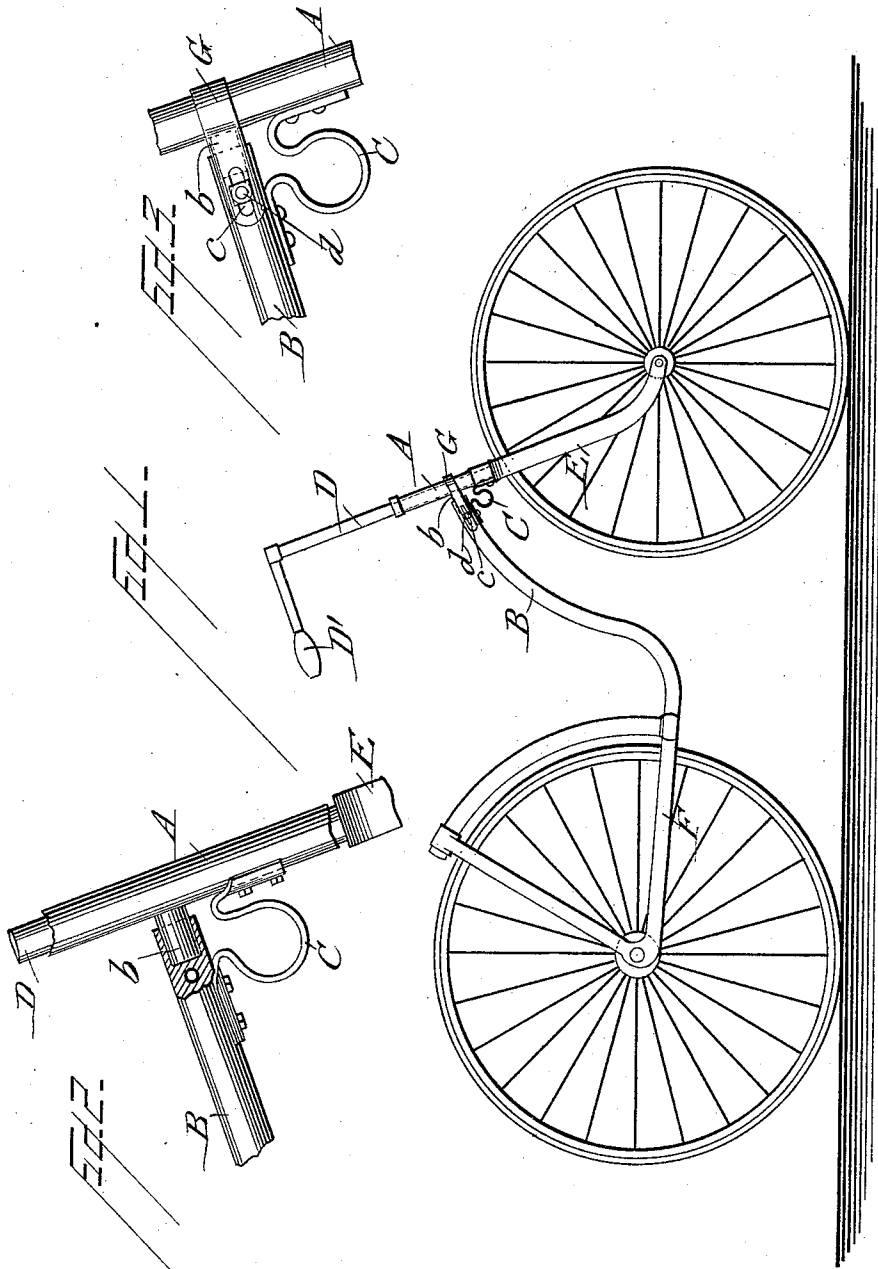


(No Model.)

F. B. HUNT.
BICYCLE.

No. 443,721.

Patented Dec. 30, 1890.



Attest:

H. H. Schott
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Inventor
Franklin B. Hunt.
per Fred O. Vacker, Atty.

UNITED STATES PATENT OFFICE:

FRANKLIN B. HUNT, OF RICHMOND, INDIANA, ASSIGNOR OF ONE-HALF TO
L. C. ALLEN, OF WASHINGTON, DISTRICT OF COLUMBIA.

BICYCLE.

SPECIFICATION forming part of Letters Patent No. 443,721, dated December 30, 1890.

Application filed September 12, 1890. Serial No. 364,734. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN B. HUNT, a citizen of the United States, residing at Richmond, in the county of Wayne and State of Indiana, 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.

This invention relates to an improvement in bicycles, the object thereof being to improve and perfect the construction of vehicles of this kind; and the invention consists, essentially, in a spring of peculiar form and arrangement between the front and the rear frames carrying, respectively, the front and rear forks, whereby a yielding connection is made between the two parts of the bicycle-frame; and the invention further consists in certain peculiarities in the construction, arrangement, and combination of the several parts, substantially as will be hereinafter fully described and claimed.

In the annexed drawings, illustrating my invention, Figure 1 is a side elevation of a bicycle provided with my present improvement. Fig. 2 is a detail view of the interposed spring and the parts with which it is connected. Fig. 3 is a similar detail view of the same part, showing in addition a clip which is employed for the purpose of holding the parts in proper relative position laterally.

Like letters of reference designate corresponding parts throughout the different figures of the drawings.

E designates the front fork of a bicycle-frame, which carries the forward wheel, and F the rear fork of said frame, wherein the rear wheel is arranged. The front fork E is provided with the upward extension D, at the upper end of which is the handle D'. The rear fork F is provided with the upward extension or reach B, the end of which is contiguous to the steering-rod D at a point a suitable distance above the front fork E.

A designates a socket, within which the rod D is located and wherein it turns under the manipulation of the handle D' for the purpose of changing the direction of motion of the

front wheel, and thus guiding the bicycle according to the desire of the rider. The socket A fits neatly around the rod D, which passes through it, the latter having only sufficient play therein to move nicely to accomplish the proper movement of turning in guiding.

The upper end of the extension rod or reach B is close to the socket A. A spring C connects the reach with the socket. It is interposed between them in some suitable and convenient manner. Said spring C may be of any desirable and suitable form and may be bent in whichever way appears best to adapt it for its purpose. It consists of a flat piece of steel preferably bent to form a loop having two arms, as shown in the figures of the drawings, one of which arms is securely bolted, riveted, or otherwise fastened to the under side of the reach B near the end thereof, while the other of the arms is securely bolted or otherwise fastened to the rear face of the socket A. These "arms," as I have termed them, of the flat spring may be broadened and curved on the sides thereof which come next to the reach and the socket, so as to have a tighter connection and firmer bearing thereon. This spring C is one of the essential features of the invention and may be considered its main feature. The idea is to have a yielding connection between the front and rear forks of the bicycle-frame, so that all the spring motion which may be required in each direction will be effectually secured. It will be found that this yielding connection between the front and rear forks will provide great ease of motion in the bicycle, allowing all the parts to yield and be elastic with respect to each other, so that the movements of the vehicle may be free from any jolting or jarring consequent upon the unevenness of the surface over which it passes. This spring-connection will also be found to make the construction of the bicycle much cheaper than it commonly is and will be found very much cheaper than any mode or means of imparting a spring motion to a bicycle which is now in use.

The end of the reach B directly opposite and closely contiguous to the socket A is preferably provided with a buffer or cushion b for the purpose of preventing any concussion or

jar when the socket A and the end of the reach B strike each other or come in contact during the motions of the vehicle. The example of buffer *b*, which I have shown in the drawings, consists simply of a small piece of rubber inserted into an opening in the end of the reach B, as shown best in the sectional view of Fig. 2. Furthermore, it will be found best to provide a means for preventing any lateral motion of the socket A and reach B relatively to each other, as it is necessary to have a certain rigidity of connection between the socket A and reach B. This rigidity of connection must not, however, interfere with the freedom of movement of the spring. It will be understood that the connection between the parts B and A is yielding and elastic, the spring C which is provided at this point having full freedom of movement; but in addition to this, in order to prevent any lateral displacement relatively of the parts B and A, I provide the other connection just referred to, which connection preferably consists of a clip G, surrounding the socket A and extending backward alongside of the reach B, said rearward extension of the clip being provided with a slot *c* and a bolt *d*, which bolt passes through the slot *c* and through an opening shown in Fig. 2 in the reach B. This bolt *d* has a nut upon it, which can be adjusted so as to give greater or less play to the socket. Thus it will be seen that a spring motion vertically in relation to the socket is acquired by this construction and a lateral motion is given to the socket relatively to the reach.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a bicycle, the steering-frame and the

socket in which it is mounted, in combination with the rear frame and a spring constituting the sole connection between the socket and the rear fork, substantially as described.

2. In a bicycle, the steering-fork and its socket, in combination with the rear frame and a bent metal spring having its end secured rigidly to the socket and the rear frame, respectively, and serving as the sole connection between them, whereby the front wheel is permitted to yield and change its relation to the rear wheel.

3. In combination with the front fork, its socket, the rear frame, and the spring connecting the rear frame and socket, the clip attached to the rear frame and loosely encircling the socket to permit lateral motion thereof.

4. The combination of the socket, the reach, the interposed spring having its ends rigidly connected, respectively, to the socket and reach, the buffer, and the clip surrounding the socket and connected to the reach.

5. In combination with the front fork, its socket, the rear frame, and the spring-connection between the socket and rear frame, the buffer to prevent the socket from striking the rear frame.

6. In combination with the front fork, its socket, the rear frame, and the spring-connection between the socket and rear frame, the clip attached to the rear frame and provided with means of adjustment, substantially as described.

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

FRANKLIN B. HUNT.

Witnesses:

E. N. WATERS,
FRED E. TASKER.