(No Model.) 2 Sheets—Sheet 1.

S. H. ELLIS.

BICYCLE.

No. 467,794. Patented Jan. 26, 1892.

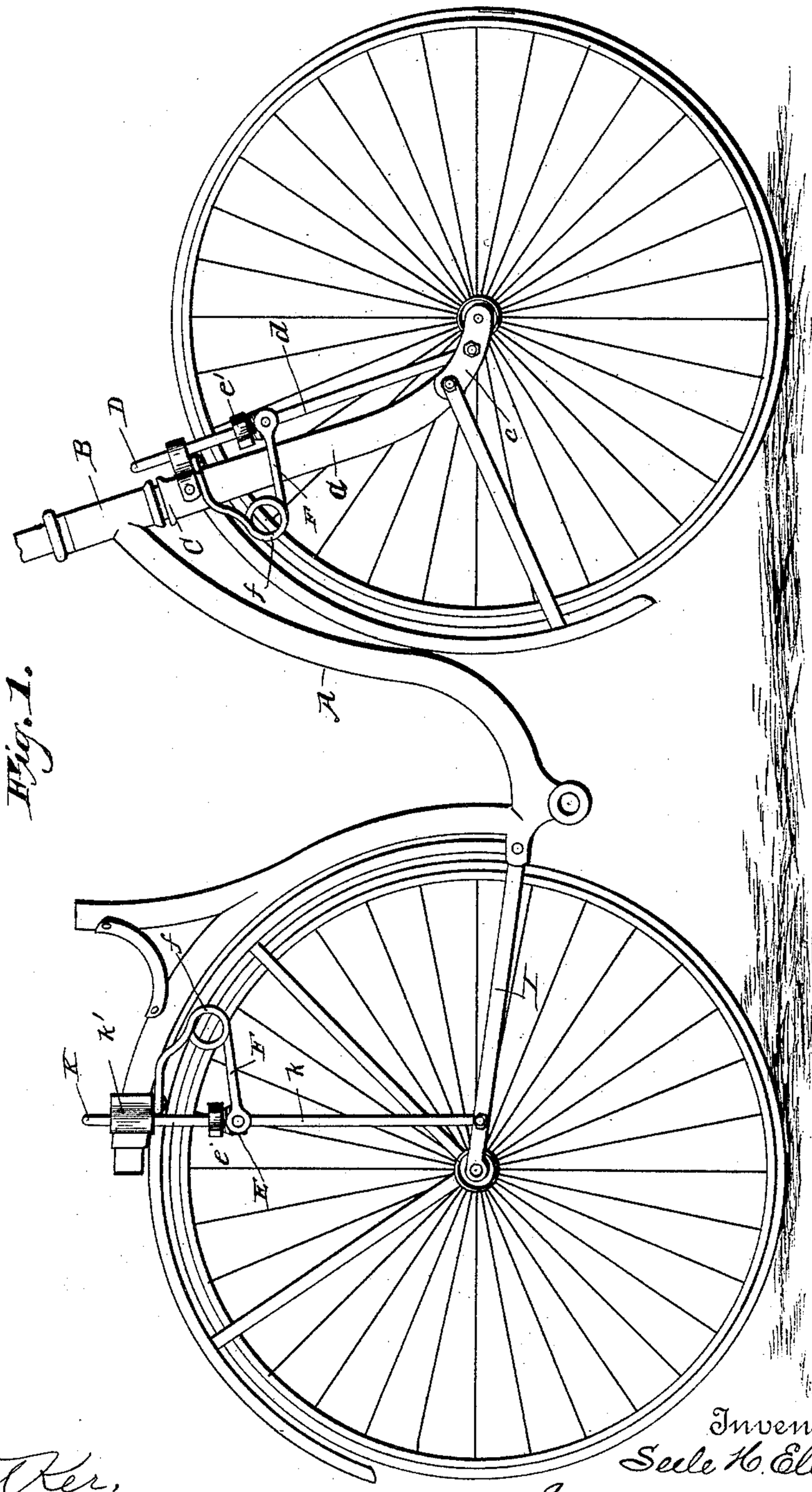


Fig. 1.

Witnesses
Samuel Ker.
Phill. Wasi.

Inventor
Seele H. Ellis
by E. W. Anderson
his Attorney

No Model.)

2 Sheets—Sheet 2.

S. H. ELLIS.

BICYCLE.

No. 467,794. Patented Jan. 26, 1892.

Fig. 2.

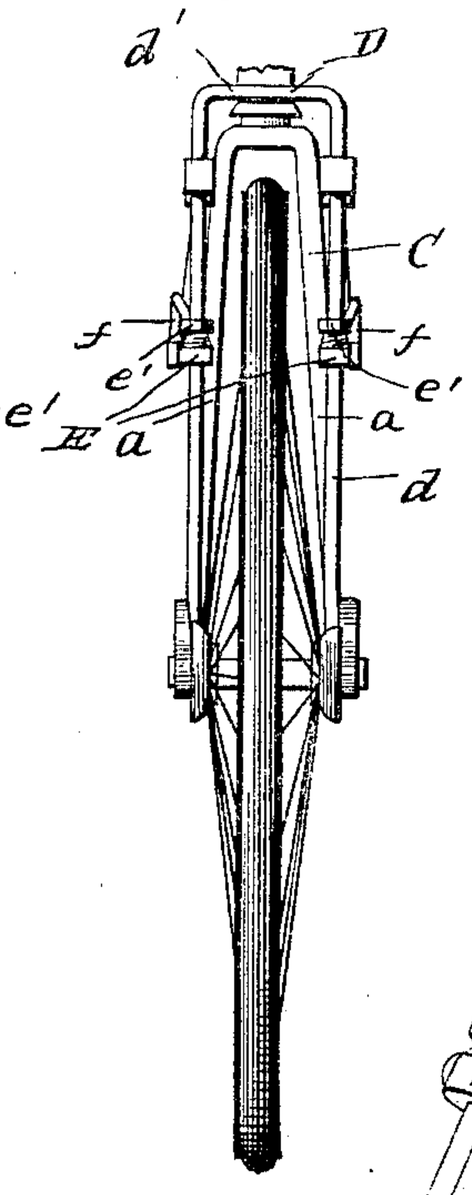


Fig. 5.

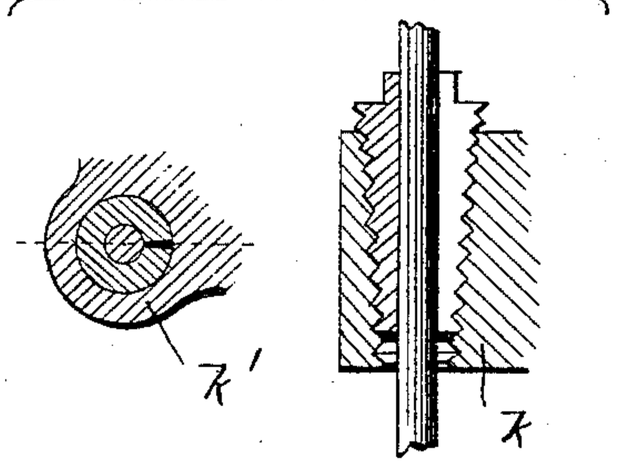


Fig. 4.

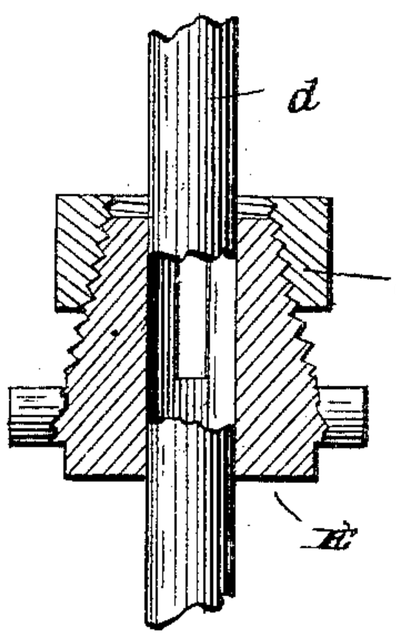


Fig. 3.

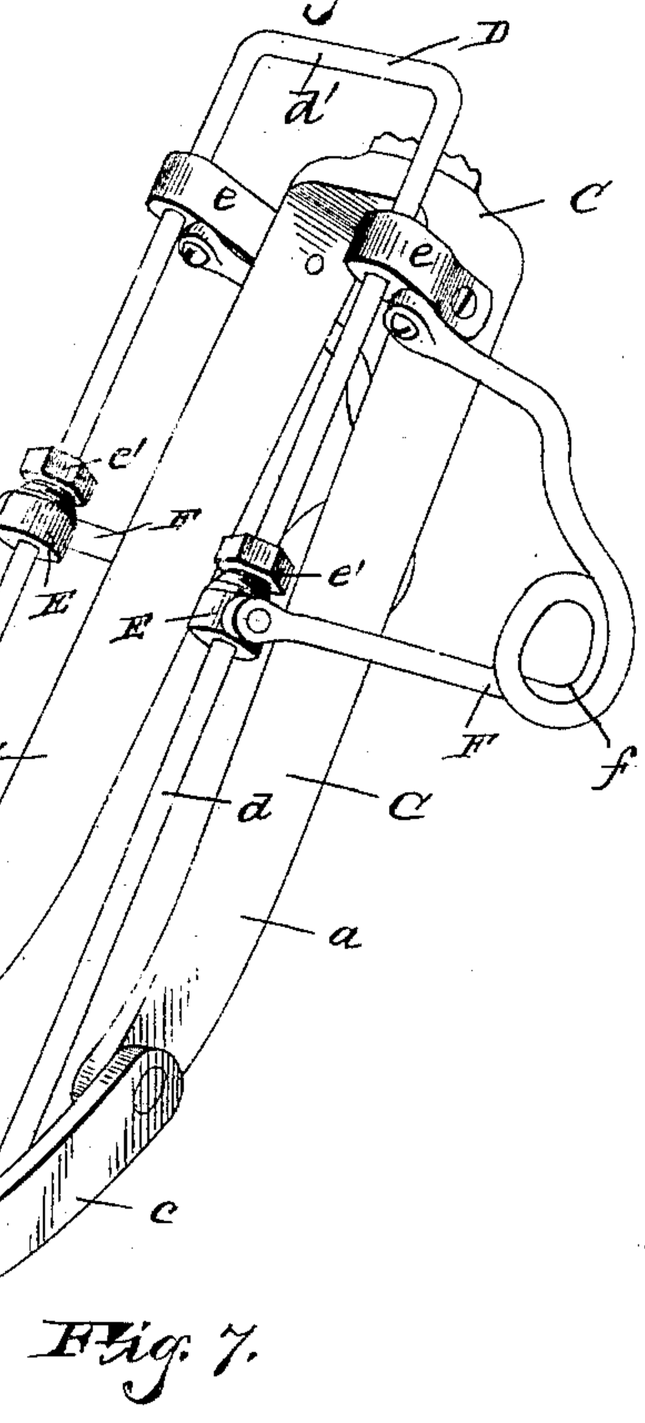


Fig. 8.

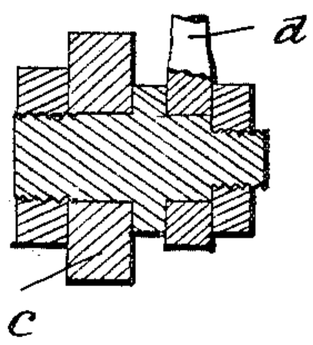


Fig. 6.

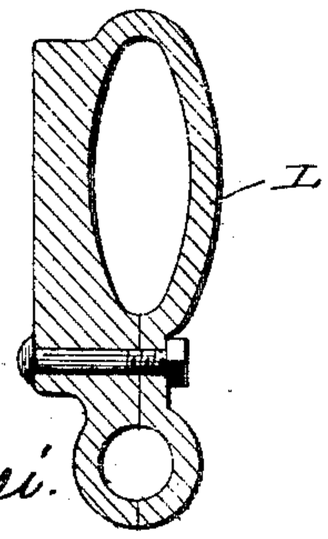
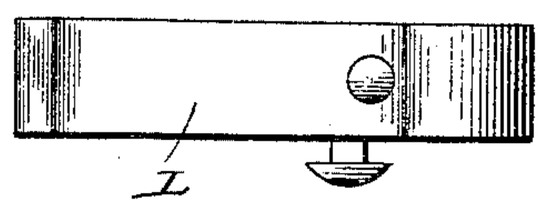


Fig. 7.



Witnesses

Phil. Mason.

Samuel Ker.

Inventor

Seele H. Ellis

by E. W. Anderson

his Attorney

UNITED STATES PATENT OFFICE.

SEELE H. ELLIS, OF WAVERLY, NEW YORK.

BICYCLE.

SPECIFICATION forming part of Letters Patent No. 467,794, dated January 26, 1892.

Application filed May 21, 1891. Serial No. 393,586. (No model.)

To all whom it may concern:

Be it known that I, SEELE H. ELLIS, a citizen of the United States, and a resident of Waverly, in the county of Tioga and State of New York, 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a side view. Fig. 2 is a front view. Fig. 3 is a perspective view of the fork. Figs. 4, 5, 6, and 8 are sectional detail views, and Fig. 7 is a detail view.

This invention has relation to certain new and useful improvements in attachments for bicycle forks and frames for destroying the vibrations of the wheels and axles; and it consists in the novel construction and combination of parts, as hereinafter specified.

The object of the invention is to provide a device of the above character which will be capable of application to any machine.

In the accompanying drawings, illustrating the invention, the letter A designates the frame of the machine, B the head, and C the front fork. The fork C is of the usual bifurcated form, suitably connected to the head or frame. To the lower end of each fork or arm *a* is pivotally connected an arm or extension *c*, having a bearing at its lower portion upon the axle.

D is a rod having the arms *d* united at their upper ends by the transverse portion or bow *d'*. The lower ends of the arms *d* are connected one to each extension *c* above their point of connection with the axle, thence passing upwardly, one in front of each arm of the fork and having a bearing near their upper ends in a casting or bearing block *e*, which may be cast with the frame or detachably secured thereto, said bearing permitting a vertical play of the said arms therethrough.

E E represent nuts, one on either arm *d*, and adjustably clamped or held thereto by the clamping device *e'*. To each of these nuts is connected one end of a spring F, the other end of which is secured to the clip or bearing-piece *e*. These springs extend rearwardly of the fork in approximately U shape, and are shown as having each the coil *f*. It will be seen that by moving the adjustable clamp-nuts E E' up or down in the rod D the tension of the spring may be adjusted to light or heavy riders, as may be desired.

In connection with the rear wheel of the machine I may use a rod and spring device somewhat similar to the attachment described in connection with the front fork.

K is a rod similar to rod D, having arms *k* extending down, one on either side of the rear wheel, and connected at their lower ends to the arms I of the frame in front of the axle, said arms sleeved at one end to the rear axle and at their opposite ends pivotally connected to lugs on the frame. The upper ends of the arms *k* bear loosely in the nuts or castings *k'*, which may be of the construction shown in the detail of Fig. 5. The rod K is provided with the adjustable clamp-nuts E, which may be similar to those of the rod D, and which are shown in detail in Fig. 4. Springs F, constructed and arranged similarly to those described in connection with the rod D, are employed one on either side, as shown.

In Fig. 8 I have shown the means by which the front fork and its attachment may be connected to the front axle, although any suitable connection may be employed. It will be seen that by connecting the lower end of the rod D to the extensions *c* above the axle, the strain is removed from the axle, being received by the said extensions.

By means of the clamp C (shown in Figs. 6 and 7) or other suitable device the attachment may be readily applied to any machine without special construction thereof.

It will be understood that the attachment may be applied to the front wheel alone instead of to both wheels, as illustrated.

By means of this device all the vibration of the axles is taken up instead of being communicated to the rider.

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

1. In a bicycle, the front fork having the lower ends of its arms provided with extensions or arms pivotally connected thereto at one end and bearing upon the axle at the opposite ends, a rod connected at its ends to said

extensions between the point of their connection with the axle and the point of their connection with the fork and having bearings near its upper portion, and springs connected to said rod, substantially as specified.

2. In a bicycle, the front fork having its arms provided with extensions or arms pivotally connected thereto and bearing upon the axle, a rod having the lower ends of its arms connected to said extensions and having bearings at its upper portion on the frame, nuts adjustably clamped or held in said rod, and springs connected at one end to said nuts and at the opposite end to said bearings or to the frame, substantially as specified.

3. In a bicycle, a rod K, having the arms *k*, one on either side of the rear wheel and connected at their lower ends to an arm of the frame, bearings on said frame for the upper portions of said arms, clamp-nuts adjustably held on said arms, and springs connected at one end to said nuts and at the opposite end to said bearings, substantially as specified.

4. In a bicycle, the combination, with the frame, of the bifurcated front fork, the extension *c* connected thereto and having bearings on the axle, the rod D, having the arms *d* connected at their lower ends to said extensions *c* and having bearings at their upper ends, clamp-nuts adjustably held in said arms, means for effecting such adjustment, springs connected at one end to said nuts and at their opposite ends to said bearings, the rod K, having the arms *k* connected at their lower ends to arms of the frame in front of the rear axle, bearings for said rod carried by the frame, and springs adjustably connected to said rod and secured to said bearings, substantially as specified.

5. The attachments for bicycle-forks, comprising the extensions *c*, the rod D, having the arms *d* connected to said extensions, the bearings for said arms detachably connected to the frame, the clamp-nuts adjustably held on said rod, and springs connected at one end to said nuts and at the other end to said bearings, substantially as specified.

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

SEELE H. ELLIS.

Witnesses:
PHILIP C. MASI,
GEO. H. PARMELEE.