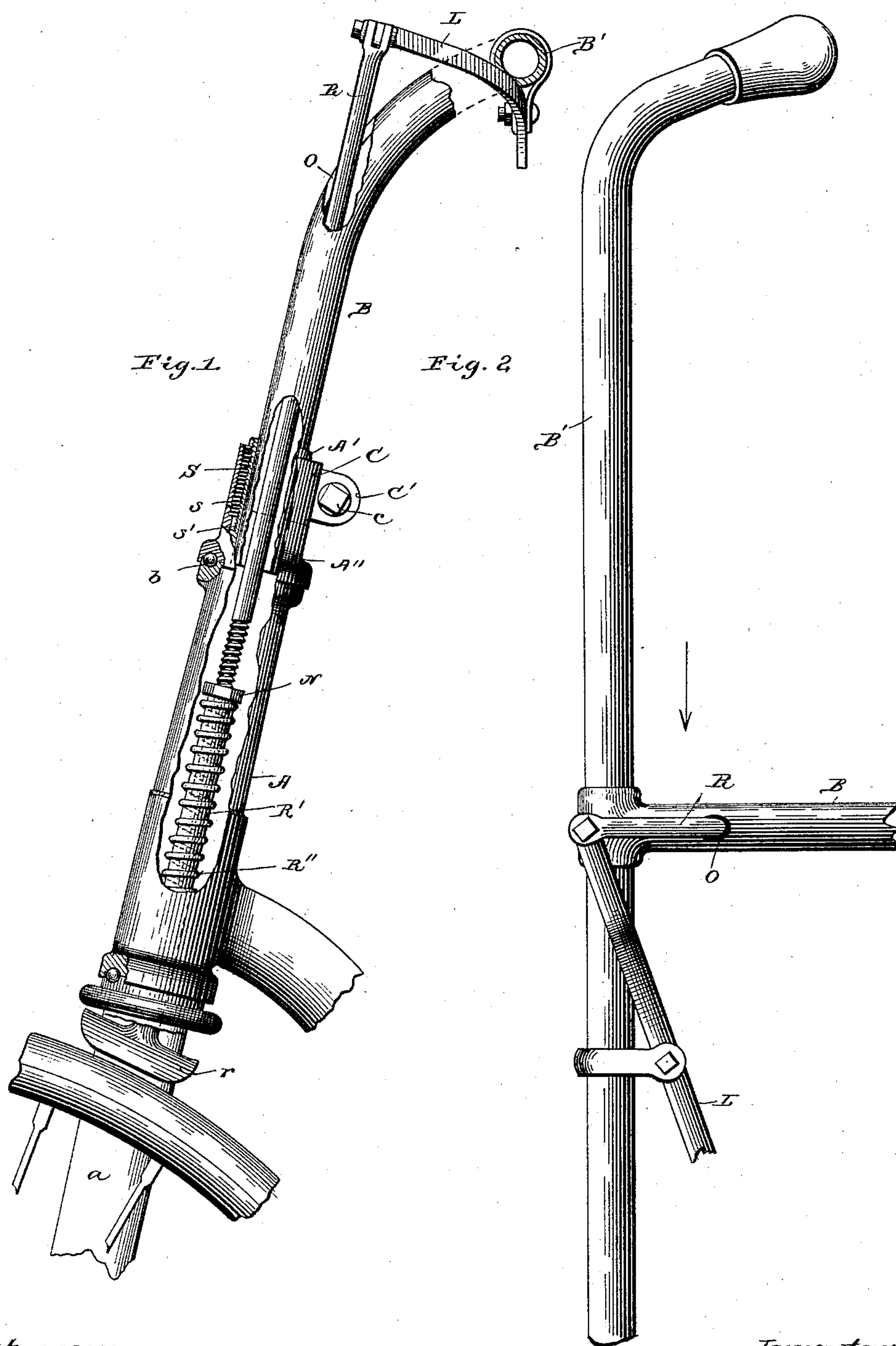


(No Model.)

O. J. ZIEGLER & W. A. HANCE.  
BICYCLE.

No. 431,308.

Patented July 1, 1890.



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# UNITED STATES PATENT OFFICE.

OSCAR J. ZIEGLER AND WILLIAM A. HANCE, OF FREEPORT, ILLINOIS, ASSIGNORS TO THE STOVER BICYCLE MANUFACTURING COMPANY, OF SAME PLACE.

## BICYCLE.

SPECIFICATION forming part of Letters Patent No. 431,308, dated July 1, 1890.

Application filed April 16, 1890. Serial No. 348,219. (No model.)

*To all whom it may concern:*

Be it known that we, OSCAR J. ZIEGLER and WILLIAM A. HANCE, both residents of Freeport, in the county of Stephenson and State of Illinois, have invented certain new and useful Improvements in Bicycles; and we 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 pertains to make and use the same.

Our invention relates to improvements in bicycles, and more particularly to improvements in the means for connecting the head and neck of a bicycle with the handle-bar head, and in connecting the brake-rod with the handle-bar head and the head and neck of the machine.

The invention is fully described and explained in this specification, and shown in the accompanying drawings, in which—

Figure 1 is a view, partly in side elevation and partly in vertical section, showing the parts of a bicycle embodying our invention, and Fig. 2 is a front elevation of the handle-bar, the upper part of the handle-bar head, and the brake-rod and brake-lever.

In the views, A is the head of a bicycle of any suitable construction.

A' is the neck journaled in the head.

a is one of the forks formed on the lower end of the neck, and B is the handle-bar head, whose lower end fits closely within the neck A', the upper end of the neck being slotted, in order that it may be compressed and clamped upon the handle-bar head. A collar A'' encircles the neck at a point immediately above the upper end of the head A and rests upon anti-friction balls b, which in turn are supported by the head. Immediately above the collar A'' is a clamp C, encircling the slotted portion of the neck A' and having rearwardly-extending ears C', transversely bored to receive a bolt c, by means of which the clamp may be contracted and the upper portion of the neck A' compressed for the purpose of securely connecting the handle-bar head, the neck, and the forks. A socket s, having its axis parallel with the axis of the handle-bar, extends from top to bottom of the clamp C and also a short

distance into the upper portion of the collar A'', the case of the socket being so placed and its diameter being such that somewhat less than half its diameter is cut from the coincident portion of the neck A'. A portion of the socket so cut from the neck is screw-threaded and is indicated in the drawings by the letter s'. A screw S lies in the socket thus formed, and it is evident that its rotation in either direction must raise or lower it in the socket by reason of its engagement with the screw-threads of the portion s' of the socket formed in the neck A', and if the screw be turned in such a direction as to force it downward with reference to the neck A' this motion of the screw must necessarily press downward the collar A'', and thus decrease the distance between the collar and the upper portion of the head A. The portion of the socket which is formed in the clamp C and collar A'' not being screw-threaded, the clamp and collar slide freely upon the screw, and the only office of this portion of the socket is to give the screw a lateral support and hold it in engagement with the screw-threaded portion s' of the socket, and thereby prevent accidental longitudinal movement of the screw with reference to the neck A'. The only office of the screw S is to provide a simple and effective means for vertical adjustment of the collar A'', and as soon as the adjustment is completed the clamp C is pressed down firmly upon the collar, and is then tightened into position by means of the bolt c, when the parts become firmly united and the entire strain is borne by the clamp, the screw being thus relieved from pressure.

The clamp C and collar A'', instead of being formed in separate pieces, as shown, may be formed in one piece, the lower portion of the piece being preferably a complete and continuous ring, and the upper part of the clamp being longitudinally slotted to permit its contraction, so that it may serve as a clamp in the manner already described. If the clamp and collar be formed in two pieces, as shown, the unthreaded portion s of the socket in which the screw S lies may, if desired, be formed wholly in the collar, the clamp being raised out of position when it is desired to



operate the screw for the purpose of adjusting the collar.

The upper part of the handle-bar head B is curved backward and upward at its junction with the handle-bar, and in the front face of the head, at a point a short distance below the handle-bar, is formed an opening O, through which is passed the brake-rod R of the machine, the axis of the brake-rod being coincident with the axis of the neck and the straight portion of the handle-bar head. The upper end of the brake-rod is coupled in the usual manner to a brake-lever L, pivoted to a support upon the handle-bar and extending outward and downward to a point beneath one of the handles, the parts being so arranged that an upward pressure upon the outer end of the brake-lever L forces downward the inner end, and with it the brake-rod. The lower end of the brake-rod is screw-threaded and engages a nut N, formed upon or rigidly fastened to a tubular continuation R' of the brake-rod, whose lower end is provided with the usual brake-shoe r, adapted to press upon the tire of the wheel. A coiled spring R'' encircles the tube R', the lower end of the spring being supported upon a shoulder at the bottom of the neck A', and the upper end of the spring being abutted against the lower face of the nut N, whereby the expansive force of the spring tends to raise the brake-rod and to hold the brake-shoe normally out of engagement with the tire.

In use the brake is operated by pressing upward the outer end of the brake-lever and thereby depressing the brake-shoe, the brake-shoe being raised by the spring R'' immediately upon the release of the end of the lever. The greater portion of the brake-rod is out of sight, and its working parts are constantly protected from the weather and from the access of dirt. For these reasons alone the placing of the brake-rod and spring within the tubular neck and handle-bar head would be material conveniences; but the construction of the machine in this respect gives a still greater advantage in the manner of adjusting the height of the handle-bar and the length of the brake-rod.

It is evident that if the clamp C be loosened upon the neck the handle-bar head may be turned freely in the neck, carrying with it the handle-bar and the brake-rod. This rotation of the brake-rod in either direction must raise or lower the brake-rod through its engagement with the nut N, thereby correspondingly raising or lowering the handle-bar, which slides freely in the neck. When the handle-bar has been raised or lowered to the desired position, the bolt c of the clamp may be tightened, thereby contracting the clamp and compressing the neck upon the handle-bar head, so as to again firmly connect the handle-bar head and neck of the machine, and when these parts are thus united the

brake-rod is entirely relieved of the weight of the handle-bar and the parts connected therewith, and serves merely as a means of operating the brake-shoe.

We are aware that the novel features of construction shown and described herein may be modified in various ways by any skilled mechanic without departing from the spirit or substance of our invention; and we desire, therefore, not to limit the invention to the use of the particular means shown and described herein, the scope of the invention, as we understand it, being defined in the following claims, to wit:

1. In a bicycle, the combination, with the head and the neck lying within the head, of a collar encircling the neck and resting upon anti-friction balls supported by the head, and the screw seated in a longitudinal socket formed partly in said neck and partly in said collar, the portion of said socket formed in the collar being plain and the portion of the socket formed in the neck being threaded to engage a screw whose lower end rests upon the bottom of the portion of the socket formed in the collar, whereby rotation of the screw adjusts the collar longitudinally upon the neck, substantially as and for the purpose set forth.

2. The combination, with the head A and neck A', of the collar A'', encircling the neck immediately above the head, and the screw S, resting in the socket s s', formed partly in the collar and partly in the neck, the portion of the socket being screw-threaded to engage the screw S, whereby rotation of the screw in one direction compresses the collar downward, substantially as and for the purpose set forth.

3. In a bicycle, the combination, with the head and the neck within the same, of a collar encircling the neck immediately above the head, a clamp encircling the neck immediately above the collar, and a screw seated in a socket formed partly in the clamp and collar and partly in the neck, the portion of the socket formed in the clamp and collar being free to slide upon the screw and the portion of the socket formed in the neck being screw-threaded to engage with the screw, substantially as and for the purpose set forth.

4. The combination, with the head A and neck A', of the collar A'' and clamp C, encircling the neck, and the screw S, seated in the socket s s', formed partly in the clamp and collar and partly in the neck, and constructed and operated substantially as and for the purpose set forth.

5. In a bicycle, the combination, with a tubular head and neck, of an extensible brake-rod made up of a tubular lower portion, provided with a brake-shoe at its lower end and a nut at its upper end, and the partly-screw-threaded upper portion engaging said nut and longitudinally adjustable by rotation therein, together with a spring adapted to



press the rod upward and to hold the brake-shoe normally out of working position, substantially as and for the purpose set forth.

6. In a bicycle, the combination, with the tubular head and neck, of a handle-bar head having its lower end seated in the neck and its upper end curved backward with reference to the axis of the head, and a brake-rod passing through an opening in the front face of the backwardly-curved portion of the handle-bar head and extending downward through the straight portion of said head and through the neck and head of the machine in a line approximately coincident with the axis of the neck.

7. In a bicycle, the combination, with the head and neck of the tubular handle-bar head seated in the neck and having its upper end curved backward, of an extensible brake-rod passing through an opening in the front face of the curved portion of the handle-bar head and extending downward through the straight portion of the head and through the neck and head of the machine, said rod being made up of two parts longitudinally adjustable upon each other by means of a nut formed on one part and a screw-thread formed on the other and engaging the nut, the lower of said parts being secured against rotation with reference to the neck of the machine and the upper part being susceptible of rotation

with the handle-bar head, whereby rotation of the handle-bar head varies the length of the brake-rod, substantially as and for the purpose set forth.

8. The combination, with the head A, neck A', and handle-bar head B, having its upper end curved backward and formed with an opening O, of the two-part brake-rod R R', passing through the opening O and lying within the neck and handle-bar head, the part R' being provided with a nut, substantially as and for the purpose set forth.

9. The combination, with the head A, neck A', and curved handle-bar head B, formed with the opening O, of the two-part brake-rod R R', the nut N, formed on the part R' and engaging a screw-thread upon the part R, and the spring R'', encircling the part R' of the brake-rod and adapted to press the brake-rod upward, said spring, said nut, and screw-threaded portion of the rod R being all inclosed within the tubular neck A', substantially as and for the purpose set forth.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

OSCAR J. ZIEGLER.  
W. A. HANCE.

Witnesses:

L. HUGHES,  
G. B. YOUNG.