

(No Model.)

J. S. COPELAND.
STEERING HEAD FOR VELOCIPEDES.

No. 586,786.

Patented July 20, 1897.

Fig. 1.

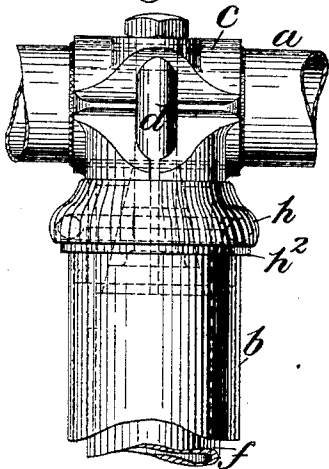


Fig. 3.

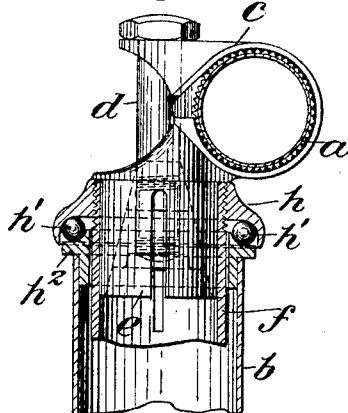


Fig. 2.

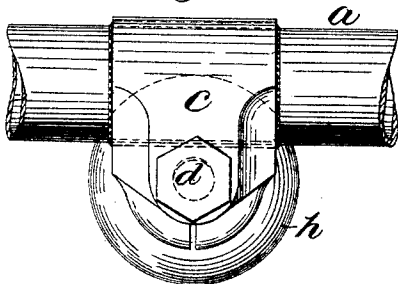


Fig. 4.

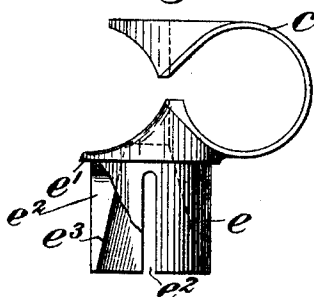
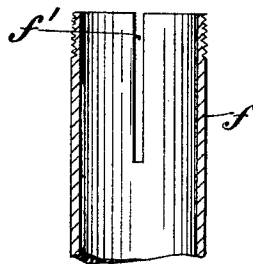


Fig. 6.



Fig. 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

JAMES S. COPELAND, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE POPE MANUFACTURING COMPANY, OF SAME PLACE AND PORTLAND, MAINE.

STEERING-HEAD FOR VELOCIPEDES.

SPECIFICATION forming part of Letters Patent No. 586,786, dated July 20, 1897.

Application filed April 23, 1895. Serial No. 546,844. (No model.)

To all whom it may concern:

Be it known that I, JAMES S. COPELAND, a citizen of the United States, and a resident of the city and county of Hartford, State of Connecticut, have invented certain new and useful Improvements in Steering-Heads for Velocipedes, &c., of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to steering-heads such as are employed in bicycles or like hand-steered vehicles, and has for its object to provide means for adjustably and detachably connecting the handle-bar holder to the fork-tube, which means by preference also form a part of or are combined in one structure with means whereby the handle-bar is clamped in its holder. The same device is further made use of to lock the adjustable upper ball-bearing case in its adjusted position upon the fork-tube.

The construction embodying the invention is shown in the accompanying drawings, in which—

Figure 1 is a front elevation of a sufficient portion of the steering-head of a velocipede to enable the application of the improvements to be clearly understood. Fig. 2 is a plan view of the same. Fig. 3 is a partly sectional elevation, the line of sight being at right angles to that of Fig. 1 and the fork-tube, the ball-bearing case and the socket-head or steering-head proper being shown in vertical section. Fig. 4 is a side elevation of the handle-bar holder removed from the head. Fig. 5 is a vertical central section of the upper part of the fork-tube. Fig. 6 is a vertical central section of a nut to be referred to.

With the handle-bar *a* and the socket-head or steering-head proper, *b*, my present invention is not directly concerned, and these parts may therefore be of any ordinary or preferred construction. The socket or clamp *c*, to which the handle-bar is directly secured, is not necessarily of the form shown, although a socket or clamp of the same general character is preferred. The clamp or socket shown comprises a split ring adapted to partly encircle the handle-bar and to be clamped to the bar to retain it in adjusted position by a bolt *d*, which passes through the free end of

the clamp and into a nut. Such a socket or clamp is fully described in another application for Letters Patent filed January 30, 1895, and serially numbered 536,627, and need not be more particularly described herein. In the present case the clamp or socket is secured to or made integral with a short tubular head or shaft *e*, which may be termed the "handle-bar shaft," and which fits readily within the end of the fork-tube *f*, the said head or shaft *e* preferably having a shoulder *e'* to rest on the end of said tube. The shaft is slotted, as indicated at *e*², so that it may be easily expandible, and its bore or the chamber within it is preferably tapering, as indicated at *e*³, rather than cylindrical.

A nut *g* is arranged to receive the end of the bolt *d*, which enters the bore of the shaft *e*, and to be drawn upward by the rotation of the bolt into the bore of the shaft, whereby not only is the ring *c* clamped firmly to the handle-bar, but the shaft *e* is also expanded within the end of the fork-tube *f*, securely fastening the handle-bar holder (comprising the socket *c* and shaft *e*) to said tube. The nut *g* is preferably tapering exteriorly and is provided with projections *g'*, such as webs or pins, which enter the slots *e*², preventing the rotation of the nut within the shaft.

The fork-tube is screw-threaded, as usual, to receive the upper adjustable ring *h* of the ball-bearing of the steering-head, the balls *h'* *h'* being received between the ring *h* and the ring *h*², mounted on the socket-head *b*. For the purpose of enabling the ring *h* to be locked in adjusted position without requiring a locking-nut or other additional device the end of the fork-tube *f* may also be slotted, as at *f'* *f'*, to be readily expandible within the ring *h* by the expansion of the shaft *e* within it.

It will readily be understood that the loosening of the bolt *d* permits alike the adjustment of the handle-bar within its socket or the removal of the holder or the rotation thereof with respect to the fork-tube, as for the purpose of bringing the handle-bars into line with the frame of the velocipede or the adjustment of the ring *h* of the ball-bearing.

While the primary object herein has been to provide for the easy removal of the handle-

bar holder or its adjustment with respect to the fork-tube and while the features of the improvement evidently might be employed separately or with other parts of different constructions, nevertheless in practice the several features usually will be combined in a single structure, because of the evident advantages accruing in the way of simplicity, economy, and lightness, and although the structure shown is an effective embodiment of the invention it is apparent that various modifications in construction and arrangement may be made without departing from the spirit of the invention.

What I claim, and desire to secure by Letters Patent, is—

1. The combination with a handle-bar holder comprising a split ring to receive the handle-bar and an expansible shaft and a tube to which said holder is to be secured, of a bolt passing through the free end of said ring and into the shaft and a nut to engage the

bolt adapted to be drawn into the shaft to expand the same, substantially as shown and described.

2. The combination with a socket-head supporting a part of the bearing of the steering-head, and a fork-tube having an expansible end and screw-threaded to receive the adjustable part of the said bearing, of a bolt entering longitudinally within the end of the fork-tube and a nut held from rotation and adapted to be moved by the bolt longitudinally within the tube to expand the same against the part of the bearing thereon and thereby to lock said part, substantially as shown and described.

This specification signed and witnessed this 20th day of April, A. D. 1895.

JAMES S. COPELAND.

In presence of—

HENRY R. KENNEDY,
HARRY P. FOWLER.