

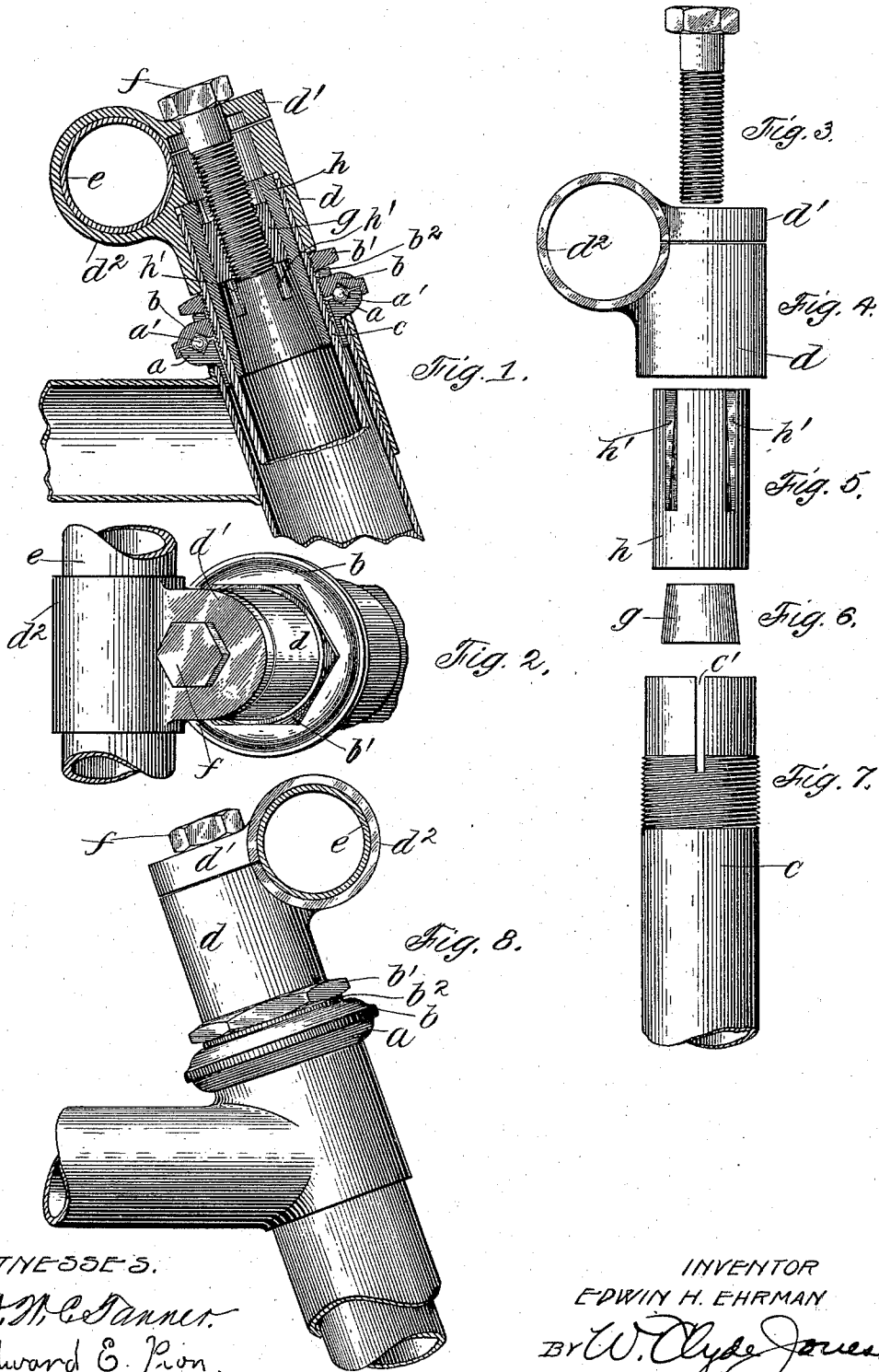
(No Model.)

E. H. EHRMAN.

ADJUSTABLE HANDLE BAR CONNECTION FOR BICYCLES.

No. 580,386.

Patented Apr. 13, 1897.



WITNESSES.

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ADJUSTABLE HANDLE-BAR CONNECTION FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 580,386, dated April 13, 1897.

Application filed April 13, 1896. Serial No. 587,331. (No model.)

To all whom it may concern:

Be it known that I, EDWIN H. EHRMAN, a citizen of the United States, residing at Oak Park, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Adjustable Handle-Bar Connections for Bicycles, (Case No. 2,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to an adjustable handle-bar connection for bicycles, its object being to provide an effective construction of extreme simplicity and one which may be manufactured at a minimum cost.

In accordance with my invention a cap is provided upon the end of the fork-stem of the bicycle, a clamp being provided upon the cap, within which the handle-bar is adapted to be clamped in any position to which it may be rotated. Upon the interior of the fork-stem a bushing-tube is provided, the tube having a tapering bore, within which a tapering nut is adapted to be wedged by means of a bolt passing through the cap and engaging a tapped hole in the tapering nut. The upper end of the fork-stem and the end of the bushing are provided with longitudinal slots, and as the tapering nut is wedged within the bore of the bushing-tube the end of the bushing-tube and the end of the fork-stem are spread laterally and exert a pressure against the inner face of the cap which securely maintains the cap in position upon the end of the fork-stem. The same bolt that thus serves to lock the cap upon the end of the fork-stem operates the clamp carried upon the cap for securing the handle-bar in position.

I will describe my invention in detail by reference to the accompanying drawings, in which—

Figure 1 is a sectional view of the adjustable handle-bar connection of my invention. Fig. 2 is a plan view thereof. Fig. 3 is a view of the bolt employed. Fig. 4 is a view of the cap carrying the clamp for the handle-bar. Fig. 5 is a view of the bushing-tube. Fig. 6 is a view of the tapering nut. Fig. 7 is a view of the end of the fork-stem. Fig. 8 is a view in elevation, showing the cap rotated through

an angle of one hundred and eighty degrees from the position illustrated in Fig. 1.

Like letters refer to like parts in the several figures.

Upon the upper end of the front tube of the bicycle-frame is provided the usual bearing-ring *a*, between which and the ring *b*, secured to the fork-stem *c*, the balls *a'* of the ball-bearing are placed, an annular channel being provided in each of the rings *a* and *b*, within which the balls are adapted to move. The ring *b* is screwed upon a thread provided upon the exterior of the fork-stem and is maintained in position by means of a lock-nut *b'*, screwing upon the fork-stem and against a washer *b²*, resting against the face of the ring *b*. Upon the upper end of the fork-stem rests a cap *d*. The cap *d* is provided with a strap *d²*, surrounding the handle-bar and carrying upon the upper end a head *d'*. When the head *d'* is moved toward the body of the cap, the handle-bar *e* is clamped in the rotated position to which it may be moved. A bolt *f* passes through the cap *d* and engages a tapped hole in a tapering nut *g*, fitting within the tapering bore of the bushing-tube *h*.

The bushing-tube *h* fits upon the interior of the fork-stem and is provided with slots *h'* at the end. The fork-stem is also provided with slots *c'* at the end, and as the bolt *f* is turned to wedge the tapering nut *g* within the bore of the bushing-tube *h* the slots permit the lateral spreading of the bushing-tube, thus pressing against the fork-stem and pressing the same into engagement with the interior of the cap *d*. In this manner the cap *d* is securely maintained upon the end of the fork-stem. The bolt *f* at the same time serves to clamp the handle-bar *e* within the clamp provided upon the cap *d* by pressing the end portion *d'* of the cap toward the body thereof, thus securely locking the handle-bar in position. The taper of the nut *g* is preferably such that the nut remains wedged within the tapering bore of the bushing-tube when once wedged in position, and the clamp upon the cap may therefore be released by the turning of the bolt *f* to thus permit the adjustable rotation of the handle-bar without at the same time releasing the cap *d*. When, however,

it is desired to release the cap, this may be accomplished by a slight blow upon the end of the bolt, thus driving the tapering nut *g* downward to permit the release of the cap by the end of the fork-stem.

When it is desired to have the handles occupy a position well to the rear, the cap *d* may occupy the position illustrated in Fig. 1, while when it is desired to place the handles farther to the front the cap may be rotated through one hundred and eighty degrees to occupy the position illustrated in Fig. 8.

When the rider sits in the stooping or scorching position, the body is thrown forward, and to accommodate the advanced position of the body the cap may be rotated to move the handle-bar into its advanced position. When the rider sits erect, as when riding leisurely, the body is moved back, and the cap may be rotated to move the handle-bar to its rearward position.

While I have illustrated the end of the fork-stem and the bushing as slotted to permit lateral yielding, other constructions for producing this result may be employed, and I have employed a fork-stem with a solid end, the metal yielding sufficiently under the pressure from within to bind the stem against the interior of the cap.

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

1. The combination with the front tube of a bicycle-frame, of a fork-stem journaled therein and having the end laterally yielding and extending above said front tube, a handle-bar holder carrying a clamp for adjust-

ably securing the handle-bar in any rotated position and provided with a cylindrical recess for the reception of the end of said fork-stem, a bolt for operating the clamp on said handle-bar holder, and means operated by said bolt for pressing the end of said fork-stem outward against the walls of said recess whereby the single bolt serves to clamp the handle-bar in the holder and to secure the holder to the fork-stem, substantially as described.

2. The combination with the front tube of the bicycle-frame carrying the bearing-ring *a*, of the fork-stem carrying the bearing-ring *b* and being extended above said ring *a* and provided with a laterally-yielding end, a handle-bar holder provided with a body portion *d* having a cylindrical recess for the reception of the slotted end of said fork-stem, said holder being provided with a strap *d'* encircling the handle-bar and carrying a head *d'* resting above the body portion *d*, a slotted bushing *h* fitting within the end of said fork-stem and provided with a tapering bore, a tapering nut *g* fitting said tapering bore and a bolt passing through the head and body portion of said cap and engaging said nut, whereby the single bolt serves to clamp the handle-bar in the holder and to secure the holder to the fork-stem, substantially as described.

In witness whereof I hereunto subscribe my name this 26th day of February, A. D. 1896.

EDWIN H. EHRMAN.

Witnesses:

CHARLES MACDONALD,
W. CLYDE JONES.