

No. 649,691.

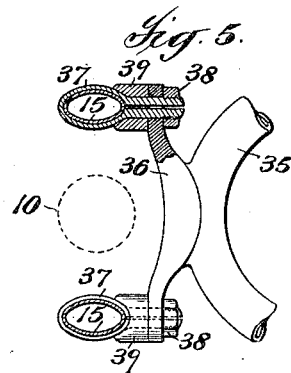
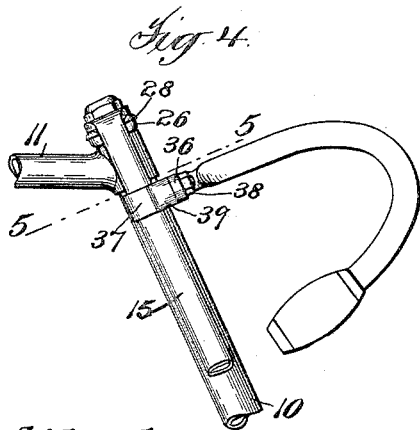
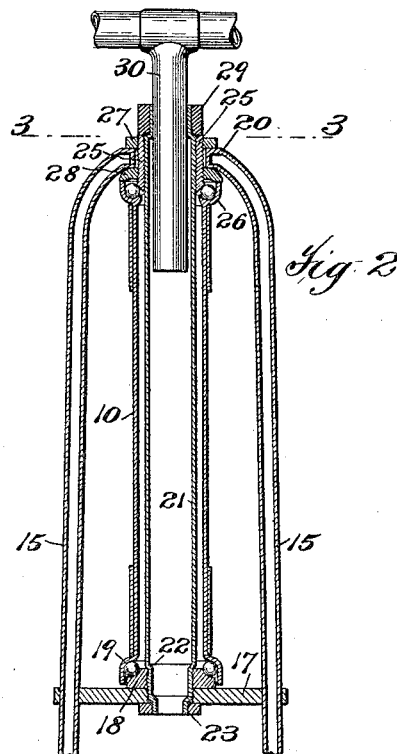
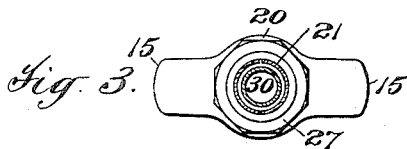
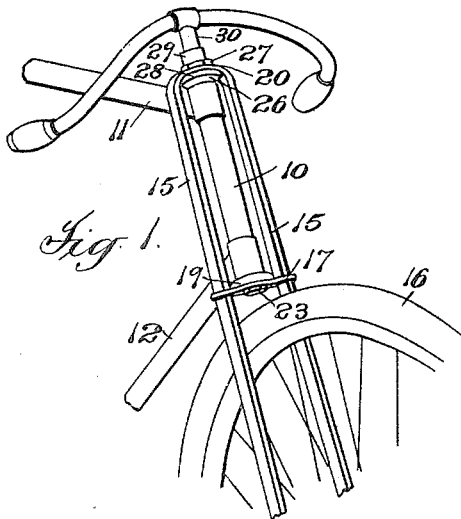
Patented May 15, 1900.

C. F. HARRINGTON.

STEERING FORK FOR BICYCLES OR OTHER VEHICLES.

(Application filed Apr. 19, 1898.)

(No Model.)



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UNITED STATES PATENT OFFICE.

CHARLES F. HARRINGTON, OF LYNDHURST, NEW JERSEY.

STEERING-FORK FOR BICYCLES OR OTHER VEHICLES.

SPECIFICATION forming part of Letters Patent No. 649,691, dated May 15, 1900.

Application filed April 19, 1898. Serial No. 678,107. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. HARRINGTON, a citizen of the United States, residing at Lyndhurst, county of Bergen, and State of New Jersey, have invented certain new and useful Improvements in Steering-Forks for Bicycles or other Vehicles, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to improvements in bicycle construction, and more particularly to the construction of steering-forks for bicycles of that class in which the fork sides extend above the bottom of the frame-head and are united above and below the frame-head and to an improved handle-bar connection for use with steering-forks of this class.

The invention aims especially to provide a construction of great strength and rigidity and to relieve the strain upon the crowns and fork-stem caused by the usual screw-cone adjustment.

As a full understanding of the invention can best be given by a detailed description of a construction embodying all the features of the invention in the preferred form, such a description will now be given in connection with the accompanying drawings, showing such a construction.

In said drawings, Figure 1 is a broken perspective view showing so much of a bicycle as is connected with the present invention. Fig. 2 is a sectional elevation of the head and upper part of the steering-fork of a bicycle constructed in accordance with the invention. Fig. 3 is a plan view of the parts shown in Fig. 2, partly in section, on the line 3 of Fig. 2. Fig. 4 is a broken side view of the upper part of the steering-fork and head, showing my improved handle-bar connection; and Fig. 5 is a plan of some of the parts shown in Fig. 4, partly in section, on line 5 of Fig. 4.

Referring to the drawings, 10 is the head, 11 the top bar, and 12 the lower brace, of a bicycle-frame.

15 15 are the side bars or fork sides of the steering-fork, which carry at their lower ends (not shown) the axle of the front wheel 16 of the bicycle, as usual. The fork sides 15 15 are permanently united below the frame-head 10 by means of a cross-connecting piece or lower

crown 17, which supports the cone 18 for the lower head-bearing, the balls of said bearing running between said cone and the cup 19, 55 carried by the head. The fork sides 15 15 are also united, preferably permanently, above the frame-head, as shown, to form the upper crown 20, which is formed with an opening to receive the upper cone-sleeve, the fork-stem, 60 and the handle-bar stem, as hereinafter described. The upper ends of the fork sides may be united to form the upper crown 20 in any suitable manner, but are preferably formed integral, as shown. 65

Secured at its lower end to and extending upward from the lower crown 17 is a central tubular stem 21. The stem 21 is formed near its lower end with a shoulder 22, which rests on the top of the cone 18, and its lower end 70 is threaded to receive a lock-nut 23, by which the stem is clamped to the lower crown 17, with its shoulder 22 bearing on the cone 18. The stem below the shoulder 22 is preferably screw-threaded to screw into the cone 18 and the crown 17, and the extreme lower end, 75 which is threaded for receiving the nut 23, will then be reduced in diameter, and one of said screw-threads will be a right-hand thread and the other a left-hand thread. 80

The upper end of the stem 21 is preferably threaded to receive an adjustable collar 25, the lower end of which forms the cone of the upper head-bearing, the balls of which run between the cone and the cup 26 on the upper end of the frame-head 10. The cone-collar 25 is also threaded exteriorly to receive upper and lower locking collars or nuts 27 and 28, which bear, respectively, on the upper and lower sides of the upper crown 20 for securing the upper end of the stem 21 and the upper crown rigidly together, the opening in the upper crown being of such size as to permit the cone-collar 25 to pass freely there-through. The lower locking-nut 28 is also 95 shaped so as to form a dust-cap for the upper head-bearing, as clearly shown in Fig. 2.

The upper end of the stem 21, above the portion threaded for receiving the cone-collar 25, is preferably reduced slightly in diameter 100 to receive the handle-bar-clamping collar 29, by which the upper end of the stem is clamped about the handle-bar stem 30, the stem 21 being formed with slits extending a suitable dis-

tance from the end thereof to allow the stem to be clamped about the handle-bar stem, as common in such cases.

The parts being constructed as described are assembled as follows: The balls and bottom cone 18 are first placed within the cup of the lower head-bearing and the balls into the cup of the upper head-bearing and the dust-cap upon the balls, and the head is then placed between the crowns of the steering-fork. The stem 21 is then passed downward through the upper crown and head and screwed through the lower cone and the lower crown and secured in place by the nut 23. The cone-collar 25 is then screwed down on the stem 21 and within the dust-cap 28 until the proper adjustment of the bearings is secured. Then the dust-cap 28 is screwed up against the under side of the upper crown 20 and the lock-nut 27 screwed down against the upper side of the crown 20, thus securely uniting the upper end of the stem 21 to the crown with the cone-collar 25 in proper adjustment. The handle-bar stem is then adjusted in position in the upper end of the stem 21 and secured by means of the clamp 29.

Referring now to the handle-bar construction shown in Figs. 4 and 5, the handle-bar 35 is carried by a bracket 36, the two ends of which are provided with clamps for securing the bracket to the fork sides 15 15 and for permitting upward and downward adjustment thereof on the fork sides. These clamps are preferably of the form shown, each consisting of a strap or collar 37, which extends about the fork side and the ends of which are brought together to extend through an opening in the end of the bracket 36 and are screw-threaded to receive a lock-nut 38. On the ends of the strap 37, between the end of the bracket 36 and the fork side, is a chair or clamping-block 39, having its outer end formed to provide a seat for the end of the bracket 36 and its inner end formed with inclined sides to bear on the strap 37, so that by turning the lock-nut 38 the strap 37 will be drawn tightly about the fork side 15 and the end of the bracket 36 securely clamped between the block 39 and the nut 38. It will be seen that with this construction the straps 37 may be readily sprung and placed about the fork sides 15 15, and the blocks 39, bracket 36, and nuts 38 being placed in position the bracket, with its handle-bar, may be securely clamped to the steering-fork and may be readily adjusted upward and downward thereon, as desired. It will be seen also that this construction permits of a wide range of adjustment of the handle-bar both by adjusting the clamps up and down on the fork sides and by reversing the bar. With the handle-bar secured in this manner the clamping-collar 29 will not be necessary, and the stem 21 need not extend above the cone-collar 25, and the lock-nut 27 will preferably be formed with a closed top to form a cap, as shown in Fig. 4.

It will be seen that with a handle-bar car-

ried by the fork sides substantially as in the construction just described a long reach is secured without increasing the length of the frame or the length of the handle-bar, and consequently without sacrifice of rigidity. It will be understood that in this feature of the invention I am not to be limited to the construction of steering-fork shown herein, but that my improved handle-bar construction may be used in connection with other forms of steering-forks of the general class having sides extending upward above the lower end of the frame-head.

It will be understood that I am not to be limited to the preferred construction shown as embodying the various features of the invention, but that the invention includes changes and modifications thereof within the claims.

What I claim is—

1. A steering-fork having its sides united above and below the frame-head and having a removable stem with means for securing it to the lower crown, said stem carrying one member of the upper head-bearing, and means for securing the stem to the upper crown after adjustment of the upper head-bearing, substantially as described.
2. A steering-fork having its sides united above and below the frame-head, and having a removable stem with means for securing it to the lower crown, a collar adjustable on said stem and forming one member of the upper head-bearing, and means for securing said collar to the upper crown, substantially as described.
3. A steering-fork having its sides united above and below the frame-head, and having a removable stem extending upward from the lower crown, and an adjustable collar forming one member of the upper head-bearing and screwed on said stem, substantially as described.
4. A steering-fork having its sides united above and below the frame-head, and having a stem extending upward from the lower crown, an adjustable collar forming one member of the upper head-bearing, said collar being threaded internally and externally and screwed on said stem, and lock-nuts on said collar for locking it to the upper crown, substantially as described.
5. A steering-fork having its sides united above and below the frame-head, and having a removable stem, said stem having a bearing-cone adjustable thereon near its upper end and forming one member of the upper head-bearing, substantially as described.
6. A steering-fork having its sides united above and below the frame-head, and having a removable stem with an adjustable bearing-cone near its upper end, said cone being threaded externally and having a lock-nut below the upper fork-crown, and a lock-nut above said crown, whereby said cone may be locked to the crown by said nuts, substantially as described.

7. A steering-fork having its sides permanently united above and below the frame-head, and having a stem extending between the upper and lower fork-crowns and removably secured thereto whereby the stem may be removed from the fork independently of the upper and lower crowns, substantially as described.

8. A steering-fork having its sides permanently united above and below the frame-head, and having a stem extending between the upper and lower fork-crowns and removably secured thereto, and a handle-bar carried by the fork sides between the upper and lower crowns, whereby the stem may be removed from the fork independently of the upper and lower crowns and the handle-bar, substantially as described.

9. The combination with a steering-fork having its sides united above and below the frame-head, and having a stem 21, bearing-collar 25, and lock-nut 27, of a handle-bar carried by the fork sides between the upper and lower crowns, substantially as described.

10. A steering-fork having its sides united above and below the frame-head and having a stem 21, lock-nut 23, bearing-cone 18, bearing-collar 25, lock-nut 27, dust-cap 28, and clamp 29, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

CHARLES F. HARRINGTON.

Witnesses:

C. J. SAWYER,
T. F. KEHOE.