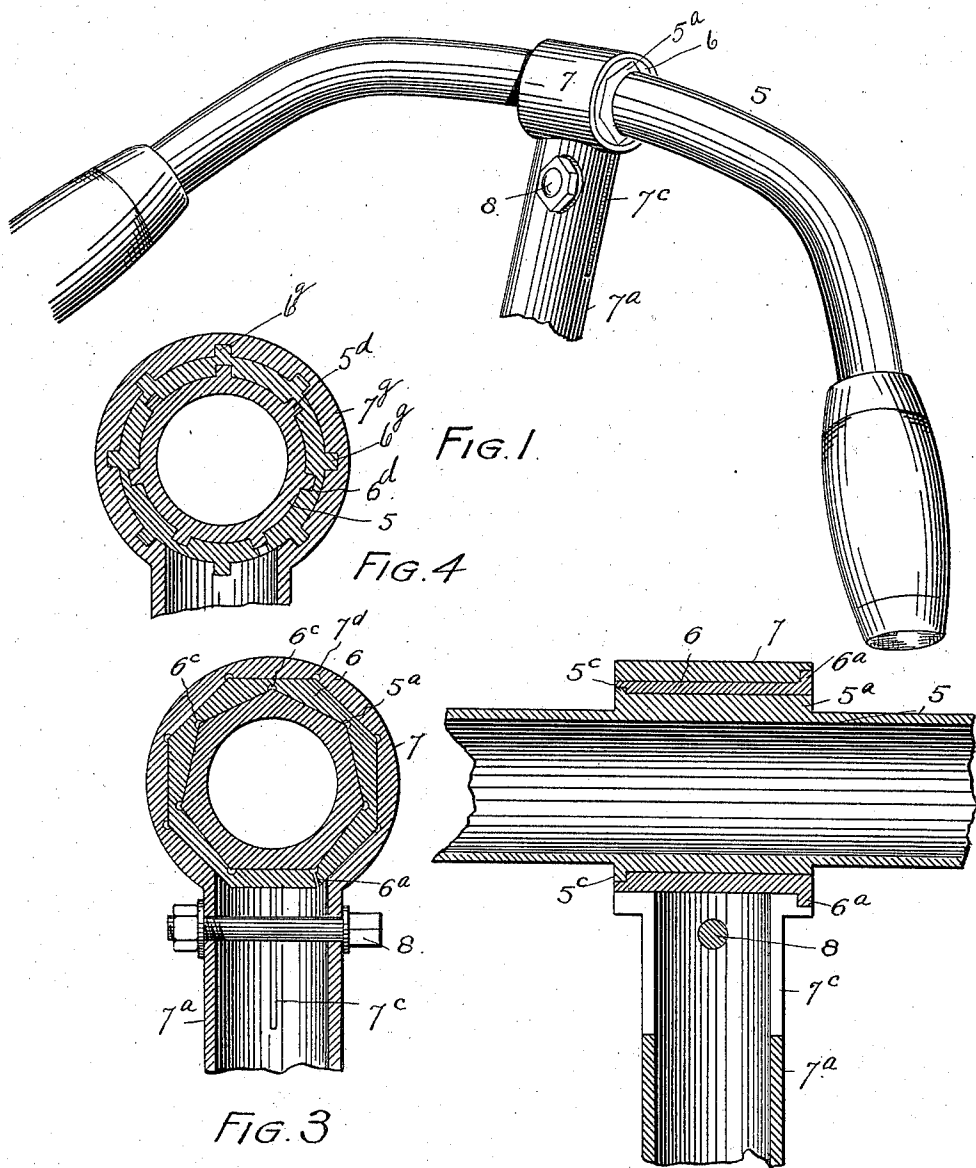


(No Model.)

J. M. ERWIN.
ADJUSTABLE HANDLE BAR FOR BICYCLES.

No. 577,805.

Patented Feb. 23, 1897.



Witnesses
G. J. Dellanave
Edith Winsworth

FIG. 2.
Inventor
J. M. Erwin.
By his Attorney *W. B. Allen*

UNITED STATES PATENT OFFICE.

JOSEPH M. ERWIN, OF DENVER, COLORADO.

ADJUSTABLE HANDLE-BAR FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 577,805, dated February 23, 1897.

Application filed July 31, 1896. Serial No. 601,276. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH M. ERWIN, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Adjustable Handle-Bars for 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 the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in adjustable handle-bars for bicycles; and it consists of the features hereinafter described and claimed, all of which will be fully understood by reference to the accompanying drawings, in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is a perspective view of a handle-bar provided with my improvements. Fig. 2 is a longitudinal section taken through the adjusting devices. Fig. 3 is a cross-section of the same. Fig. 4 illustrates another form of construction.

Similar reference-characters indicating corresponding parts in the views, let the numeral 5 designate the handle-bar, whose central portion 5^a is polygonal in cross-section. As shown in the drawings, this central part of the handle-bar is provided with seven faces of equal width. Hence the perimeter of its cross-section forms a regular heptagon. This central portion of the handle-bar is surrounded by a collar 6, whose interior perimeter describes a regular heptagon and whose exterior perimeter describes a regular octagon. The inner surface of the collar fits the part 5^a of the handle-bar, and it is provided with a slot 6^a to allow it to be clamped tightly thereon and loosened at will. The collar 6 is surrounded by a clamp 7, whose inner surface is provided with eight equal faces, whereby it is adapted to fit the exterior surface of the interposed collar. This clamp is provided with a depending stem 7^a, adapted to enter the hollow post of the front fork, (not shown,) to which it may be fastened in the usual manner. The part 7 is provided with a slot 7^c,

which extends into the stem 7^a, through which an adjusting-bolt 8 is passed.

The collar 6 is provided with a shoulder 6^a, formed on one end thereof and adapted to engage a counterpart recess formed in the clamp 7, while the opposite end of the part 5^a of the handle-bar is provided with a similar shoulder 5^c, adapted to engage a counterpart recess formed in the adjacent end of the collar. Hence when the clamp 7 is loosened the handle-bar may be pulled out of the collar in one direction without disturbing the collar, while a pull in the opposite direction moves both the part 5^a of the handle-bar and the collar from the clamp. By the use of this improvement a very delicate adjustment may be effected. For instance, if it is desired to raise or lower the handles, the clamp is first loosened and the central portion alone of the handle-bar pulled out of the collar, as heretofore explained. The handle-bar is then given a seventh of a turn or turned one-seventh part of a revolution and again inserted in the collar. The handle-bar is then pulled in the opposite direction and the collar drawn out of the clamp with it, as heretofore explained. The handle-bar and collar are then turned one-eighth of a revolution in the opposite direction, or in the direction opposite the first turn of the handle-bar, after which the collar and handle-bar are reinserted in the clamp.

Since by the operation just described the handle-bar is turned one-seventh of a revolution in one direction and one-eighth of a revolution in the opposite direction, the handles will be raised or lowered, as the case may be, to the extent equal to the difference between one-eighth and one-seventh of a turn of the handle-bar or one fifty-sixth of a revolution; hence the advantage of the collar interposed between the clamp and the central part of the handle-bar. If the collar were not used, an adjustment of this character could only be effected by giving the central portion of the handle-bar fifty-six faces, and this would make it so nearly cylindrical that it could not be easily clamped in place, and would consequently be impracticable. Moreover, by my construction it is practicable to effect a much finer adjustment than that already described. For instance, if the central

portion of the handle-bar and the interior of the collar be given eight faces and the exterior of the collar nine faces, an adjustment of the handles corresponding to one seventy-second of a revolution may be effected, and by still further increasing the number of faces of the said parts still finer or more delicate adjustment is practicable.

To reverse the position of the handle-bar, it is only necessary to turn the same a half-revolution and reinsert it in the collar and then turn the stem a half-revolution in the hollow post of the fork. By virtue of this adjustment the crook of the handle-bar may be either up or down, as desired.

It must be understood that I do not limit the construction to bicycle handle-bars, but claim it for use in all mechanical relations where it may be found practicable.

For the purpose of obtaining better clamping results it may be desirable to form longitudinal recesses or grooves 6^c at the interior angles of the collar 6 and similar recesses or grooves 7^d at the corresponding angles of the clamp 7.

In the construction shown in Fig. 4 the central part of the handle-bar is provided with exterior tongues 5^d, adapted to engage interior counterpart grooves formed in the collar 6^d, which is provided with exterior tongues 6^e, adapted to engage counterpart grooves formed in the clamp 7^e. The handle-bar is provided with seven tongues and the adjacent collar with a corresponding number of grooves. The exterior surface of the collar is provided with eight tongues and the clamp with a corresponding number of counterpart grooves formed on its interior surface. Hence the same adjustment may be effected as in the construction shown in the other views. In effecting this adjustment the handle-bar may be pulled out of the collar and turned one-seventh of a revolution in either direction and reinserted. It may then be pulled in the opposite direction, removing the collar. The handle-bar and collar may then be turned one-eighth of a revolution in the direction opposite the first turn of the handle-bar, after which the handle-bar and collar are returned to their normal position. By this operation the same adjustment is effected as heretofore explained when describing the other form of construction. It is evident that one or more of the tongues 5^d and one or more of the tongues 6^e may be omitted without interfering with the operation of the mechanism. At least one tongue 5^d and one tongue 6^e must, however, be employed.

Having thus described my invention, what I claim is—

1. The combination of a bar, polygonal in cross-section, a clamping-collar whose interior and exterior perimeters describe polygons having an unequal number of sides, the inner surface of the collar being adapted to

fit the bar, and a clamp whose inner surface is adapted to fit the exterior surface of the collar, substantially as described.

2. The combination of a bicycle handle-bar, whose central portion is polygonal in cross-section, a slotted collar, the perimeters of whose inner and outer surfaces describe polygons having an unequal number of sides, and a clamp surrounding said collar, which it is adapted to fit, said clamp being provided with a depending stem adapted to connect with the post of the bicycle-fork, substantially as described.

3. The combination of a bicycle handle-bar whose central portion is formed exteriorly polygonal in cross-section, a slotted collar whose interior and exterior perimeters describe polygons having an unequal number of sides, the inner surface of the collar being adapted to fit the central portion of the handle-bar, said collar having grooves formed at its interior angles, a clamp surrounding said collar which the clamp is adapted to fit, said clamp having grooves formed at its interior angles and also provided with a depending stem adapted to be connected with the post of the fork, substantially as described.

4. The combination of a bar polygonal in cross-section, a clamping-collar whose interior and exterior perimeters describe polygons having an unequal number of sides, the inner surface of the collar being adapted to fit the bar, the latter having a stop adapted to engage one end of the collar, and a clamp whose inner surface is adapted to fit the exterior surface of the collar, the latter having a stop at the end opposite the stop on the bar, said stop being adapted to engage the adjacent end of the clamp.

5. The combination of a bar, a clamp and an interposed collar, the latter having its interior and exterior surfaces provided with an unequal number of elements or instrumentalities adapted to prevent independent rotation when engaged by surfaces having similar or counterpart elements, the bar being fashioned to fit the interior surface of the interposed collar, and the clamp adapted to fit the exterior surface thereof.

6. The combination of a bar, a clamp and an interposed collar, the latter having its opposite surfaces provided with an unequal number of elements or instrumentalities adapted to prevent independent rotation when engaged by surfaces having similar or counterpart elements, the bar being fashioned to fit one surface of the interposed collar, and the clamp adapted to fit the other surface thereof.

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

JOSEPH M. ERWIN.

Witnesses:

ALFRED J. O'BRIEN,
G. J. ROLLANDET.