

No. 625,308.

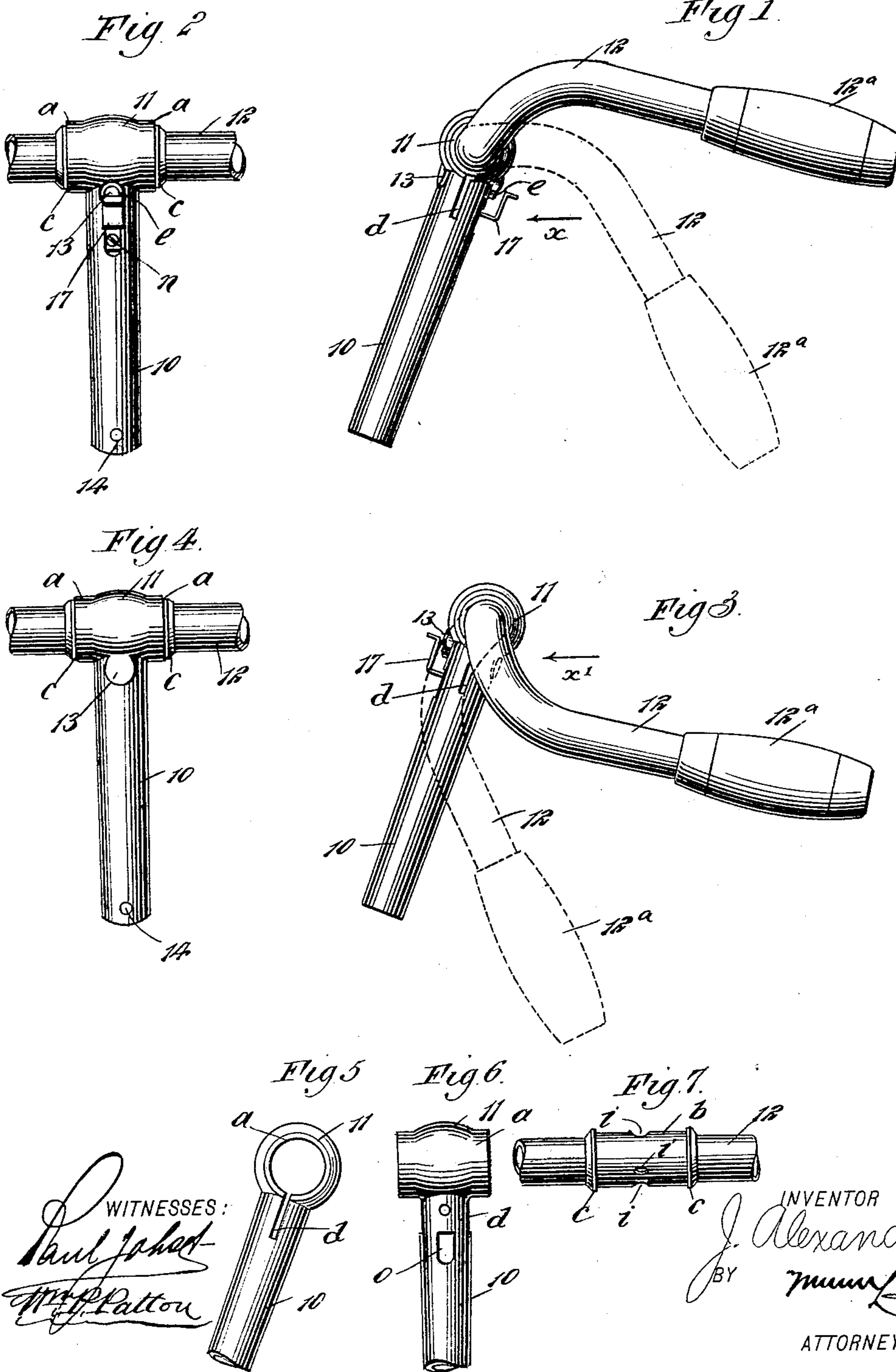
Patented May 23, 1899.

J. ALEXANDER.  
ADJUSTABLE HANDLE BAR FOR BICYCLES.

(Application filed Nov. 10, 1898.)

2 Sheets—Sheet 1.

(No Model.)



WITNESSES:  
*Paul J. Scher*  
*W. P. Patton*

INVENTOR  
*J. Alexander*  
BY *Mumford*  
ATTORNEYS.

No. 625,308.

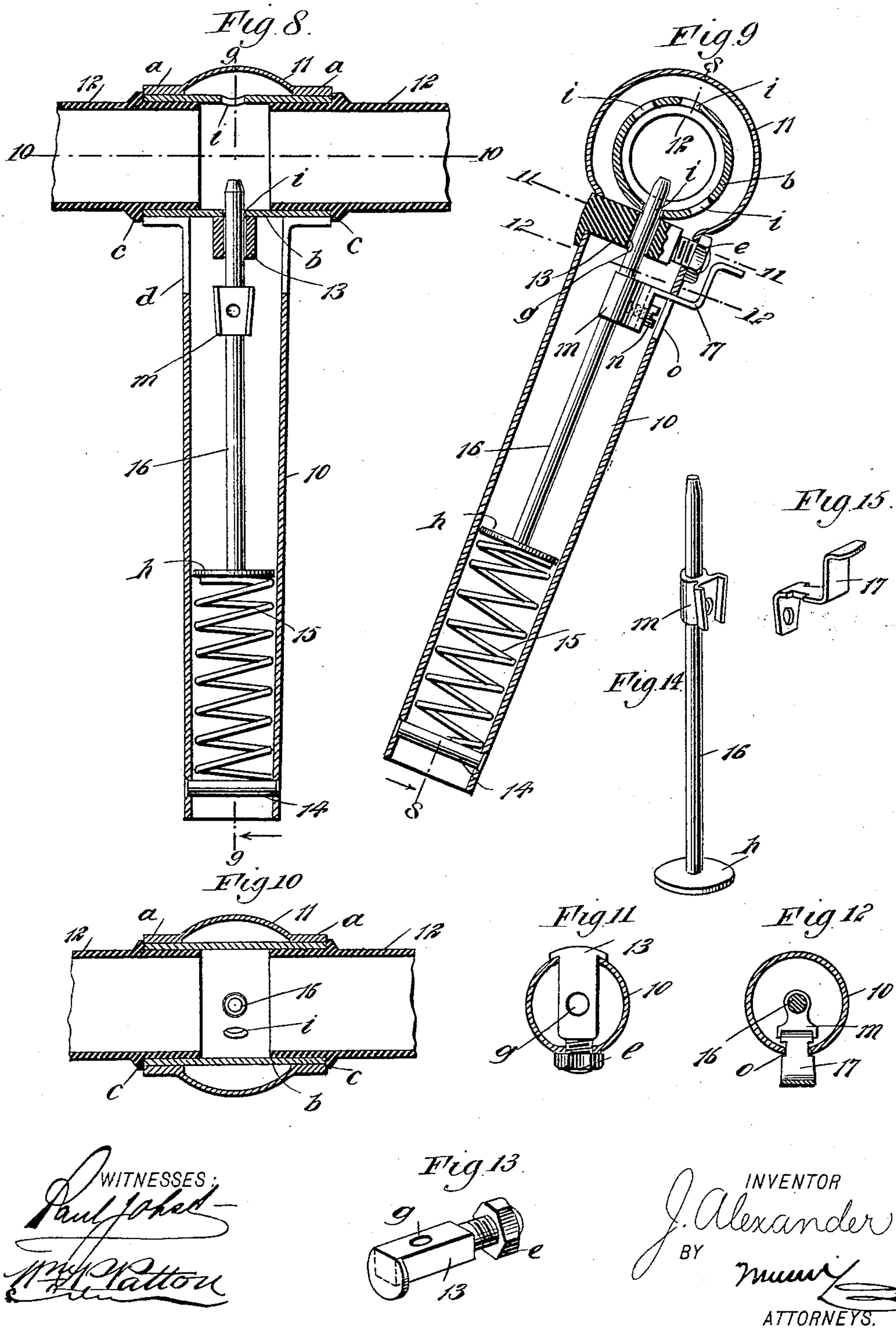
Patented May 23, 1899.

J. ALEXANDER.  
ADJUSTABLE HANDLE BAR FOR BICYCLES.

(Application filed Nov. 10, 1898.)

(No Model.)

2 Sheets—Sheet 2.





# UNITED STATES PATENT OFFICE.

JESSE ALEXANDER, OF NEW YORK, N. Y.

## ADJUSTABLE HANDLE-BAR FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 625,308, dated May 23, 1899.

Application filed November 10, 1898. Serial No. 696,047. (No model.)

*To all whom it may concern:*

Be it known that I, JESSE ALEXANDER, of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Adjustable Handle-Bars for Bicycles, of which the following is a full, clear, and exact description.

This invention relates to the class of handle-bars adapted for adjustment to dispose the grip portions of the bar at a desired elevation, and has for its objects to provide a handle-bar which will be very reliable, be conveniently adjustable while the bicycle is in motion, and be adapted to enable wear to be taken up, and thus prevent any looseness of the handle-bar on the steering-post, and, furthermore, to provide at low cost a neat, strong, and very light mechanism for the quick adjustment of the handle-bar.

The invention consists in the novel construction and combination of parts, as is hereinafter described, and indicated in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side view of a handle-bar and a steering-post, showing part of the improvement thereon. Fig. 2 is a rear view, in the direction of the arrow  $x$  in Fig. 1, of a central portion of the handle-bar and of the steering-post, showing details of the improvement thereon. Fig. 3 is a side view of the parts shown in Figs. 1 and 2 with the handle-bar differently adjusted. Fig. 4 is a front view, in the direction of the arrow  $x'$  in Fig. 3, of a middle portion of the handle-bar and of the steering-post, showing part of the improvement thereon. Fig. 5 is a detached side view of the upper portion of the steering-post, showing a novel construction thereof forming part of the improvement. Fig. 6 is a rear view of the steering-post shown in Fig. 5. Fig. 7 is a plan view of a middle portion of the handle-bar removed from the steering-post. Fig. 8 is an enlarged sectional elevation of the engaged portions of the handle-bar and the steering-post, substantially on the line 8 8 in Fig. 9, looking in the direction of an arrow in said figure. Fig. 9 is a sectional side view of parts essentially on the

line 9 9 in Fig. 8. Fig. 10 is a sectional plan view substantially on the line 10 10 in Fig. 8. Fig. 11 is a sectional plan view substantially on the line 11 11 in Fig. 9. Fig. 12 is a sectional plan view substantially on the line 12 12 in Fig. 9. Fig. 13 is a detached perspective view of a clamping-bolt and guide, which is a feature of the improvement. Fig. 14 is a perspective view of a slide-bar and other details thereon, which are also features of the improvement; and Fig. 15 is a detached perspective view of a thumb-piece employed.

The steering-post 10 shown in the drawings is tubular, as usual, and in service connects with the front fork of the bicycle in any approved manner which will permit it to be given a half-revolution thereon and then be secured thereto, and as this means of attachment is a common detail in bicycles it is not deemed necessary to illustrate or further describe it. The post 10 is afforded sufficient length to adapt it for effective service and on its upper end has a cross-head 11 of novel construction, which, as shown, is in the form of a short tube merging at its under side into the upper extremity of the tubular post 10, with which it is integral.

The portion of the cross-head 11 intermediate of its ends and directly above the post 10 is given a bulbous form, which provides a spherical shell of somewhat greater diameter at its center of length than that of the ends of the cross-head, which latter respectively project beyond opposite sides of the post 10, as shown at  $a$  in the drawings.

The bores of the cylindrical ends  $a$  are of like diameters and are axially coincident, which adapts said ends of the cross-head to receive a middle portion of the handle-bar 12. The handle-bar 12 is preferably bent so as to give it the ordinary curved form, which will dispose the handle-grips 12<sup>a</sup> at a suitable incline from a transverse plane at right angles to the axis of the steering-post. The middle portion of the handle-bar 12, which is in engagement with the cross-head 11, may be increased in diameter by placing and securing a thimble  $b$  thereon, said thimble having an exterior diameter which will adapt it to loosely fit within the bores of the aligned ends  $a$  on the cross-head 11.

It will be seen that two circumferential



flanges or beads *c* of similar height are formed on the body of the handle-bar 12 at points which permit them to respectively come in contact with the ends of the cross-head 11 when the handle-bar is in place therein. To facilitate the insertion of the handle-bar, the upper end of the post 10 is slotted at *d* in alinement with transverse slots in the lower side of the ends *a* of the cross-head, which confers a slight degree of elasticity to the partly-severed wall of the cross-head, whereby it is permitted to expand slightly, and thus be so increased in diameter as to permit it to be forced over the beads *c*, that project slightly above the thimble *b*, so as to form abutments on which the ends of the cross-head impinge when it is in normal condition. Opposite perforations are formed in the post 10 in a plane at right angles to that of the longitudinal slot *d*, the perforation at the normally front face of said post being angularly formed to fit a clamping-bolt 13, the main portion of the body of which is preferably rectangular in cross-section.

The bolt 13 is threaded at one end for the reception of a nut *e* and at the opposite end is headed, said head having a depending lip, the upper face of which is flat and is bedded in a shallow recess formed to receive it in the outer surface of the spherical part of the cross-head, which aids to prevent the bolt from rocking sidewise, which is to be avoided. In the same vertical plane with the slot *d* a perforation *g* is formed in the bolt 13, said perforation being disposed in the plane of the longitudinal axis of the post 10, as it will be evident that when the bolt 13 is in place and the nut *e* is tightened it will bear on the side of the post 10 and draw with equal force upon the two bisected portions of the post, so that the vertical perforation *g* will remain practically central in said post.

At a suitable distance below the cross-head 11 a transverse seat 14 is secured in the post 10, and on said seat 14 a spring 15 rests, as clearly shown in Figs. 8 and 9.

A slide-bar 16 in rod form, provided with a flat head *h* at its lower end, is loosely passed upward through the perforation in the bolt 13, and its head *h* is seated on the spring 15 when the parts of the device are assembled, the length of the bar 16 being sufficient to permit its upper end to project a short distance above the bolt 13 when the head *h* is seated upon the spring 15.

Two locking-perforations *i*, which are suitably spaced apart, are formed in the thimble *b* at each side of the axis of the handle-bar, and said thimble, which is preferably of steel or other durable metal, may be employed as a coupling-sleeve to join together two severed main portions of the handle-bar, as represented in Fig. 8.

The locking-perforations *i* may be increased in number, if desired, and, as their name indicates, they are designed to separately receive the upper end of the slide-bar 16, which

is slightly tapered at its upper extremity to facilitate its entrance into an appropriate perforation *i*. On the slide-bar 16 a keeper-lug *m* is formed or secured, having a grooved face, the groove being dovetail-shaped or narrowed from the top downwardly, as clearly shown in Fig. 14, said dovetail groove being provided for the reception of one end of the substantially Z-shaped thumb-piece 17. The thumb-piece 17, which, as represented, consists of a single piece of metal, has a depending member adapted to be seated between the side flanges of the grooved face of the keeper-lug *m* and is secured thereto by a screw *n*. From the secured member of the thumb-piece 17 a portion thereof projects outwardly, then upwardly, and then outwardly at the top, thereby providing a flat lip for receiving hand-pressure when the slide-bar 16 is to be manipulated.

A longitudinal slot *o* is formed in the rear face of the post 10, through which the thumb-piece 17 projects, said slot having such width and length as will permit free play of the thumb-piece in the slot.

After the parts are properly assembled, so as to dispose the handle-bar 12 within the cross-head 11, and the nut *e* is adjusted to clamp the two ends of the cross-head in such close engagement with the thimble *b* as will prevent any looseness, but yet allow the handle-bar to receive rocking movement for the elevation or depression of the grip-pieces 12<sup>a</sup>, it will be seen that when the slide-bar comes opposite one of the locking-perforations *i* the spring 15 will by its expansion force the upper end of the slide-bar through said perforation, and thus secure the handle-bar at a desired angle on the post 10.

In Fig. 1 the handle-bar 12 is shown by full lines in one position of secured adjustment and by dotted lines in a lower position, the change in position being readily effected by the rider while the bicycle is moving by pressing the thumb-piece 17 downwardly, so as to depress the slide-bar 16 and thus withdraw its upper end from a locking-perforation *i*, the pressure of the spring 15 on the release of the thumb-piece serving to elevate said slide-bar and engage it with a locking-perforation *i*, opposite which it may be brought by the rocking movement of the handle-bar. Should it be desired to give the handle-bar a reverse position, so as to lower it below the plane of the cross-head 11 a greater degree, as shown in Fig. 3, this may be effected by giving the post 10 a half-revolution, which will locate the thumb-piece 17 at the front of the bicycle. The handle-bar may now be released and then rocked upwardly, rearwardly, and downwardly, which will dispose it as clearly shown by full and dotted lines in Fig. 3, which respectively represent two locked adjustments of the handle-bar.

It is feasible, by means of the nut *e*, to so clamp the handle-bar in the cross-head 11 at a desired point of adjustment intermediate



of the locking-perforations *i* that the handle-bar will remain so adjusted while in service until the nut is slackened slightly or sufficiently to permit the handle-bar to be rocked 5 into another position.

It is apparent from the foregoing description that the peculiar formation of the hollow cross-head 11 gives it both lightness and great strength. Furthermore, the slotting of 10 the ends of the cross-head and the wall of the post 10, which converts these parts into a spring-clamp, affords means for reliably securing the handle-bar 12 at any point of inclination from the axis of the post 10 and at 15 all times prevents looseness between the handle-bar and post.

The provision of the rod or slide-bar 16 as a locking member for the handle-bar and the thin flat head on the lower end of said bar to 20 receive the pressure of the spring 15 confers strength as well as lightness to said member, which by its loose insertion through the perforation in the bolt 13 is maintained centrally in the post 10, free to engage any one of the 25 locking-perforations *i* in the handle-bar for the retention of said handle-bar at any desired angle.

The specific means for the quick and easy attachment of the thumb-piece 17 upon the 30 slide-bar 16 by the embedment of its inner depending member in the dovetail groove of the lug *m* on the slide-bar is a novel simple construction of great advantage, as it provides a light, strong, and firm connection of 35 parts, and the parts may be disconnected, if desired, by the removal of a single screw *n*.

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

40 1. In an adjustable handle-bar, the combination with a steering-post, a hollow cross-head thereon, the head and post being slotted in alinement, and a transverse bolt and nut engaging the post to contract the wall of the 45 cross-head, said bolt having a perforation, of a handle-bar perforated in series within the cross-head, said handle-bar being held secured in the cross-head where adjusted by contraction of said cross-head, and a spring-pressed 50 slide-bar adapted to pass through the perforation of the clamping-bolt for engagement with an opposite perforation in the handle-bar.

2. In an adjustable handle-bar, the combination with a steering-post, a cross-head there-

on, the cross-head and post being slotted and 55 said slots being in alinement, a clamping-bolt in a transverse perforation in the post near the cross-head, and a nut on said bolt, said bolt having a perforation in alinement with the 60 axis of the post, of a spring-pressed slide-bar in rod form, having a flat head on its lower end, a keeper-lug on the slide-bar near the clamping-bolt, through the perforation in which said bar loosely slides, and a thumb-piece removably secured on the keeper-lug 65 and projecting through a slot in the post.

3. In an adjustable handle-bar, the combination with the steering-post, the integral hollow cross-head thereon, the head and post having alined slots, and a transverse clamping-bolt 70 adapted to compress the cross-head, of a two-part handle-bar, a spacing-thimble firmly secured on the bar to hold its sections separated, and rigidly-fixed beads at the ends of the 75 thimble projecting slightly above its periphery, said beads forming abutments to prevent longitudinal displacement of the handle-bar when it is clamped upon the thimble.

4. In an adjustable handle-bar, the combination with the slotted steering-post, having 80 a hollow cross-head thereon which is centrally enlarged and has cylindrical ends, slotted in alinement with the slots of the post, and a transverse bolt adapted to compress the post and thus reduce the diameter of the ends of 85 the cross-head, of a bisected handle-bar, a thimble affixed thereon and holding the two parts of the handle-bar separated, beads at ends of the thimble also rigidly affixed upon 90 the handle-bar, and projecting slightly above the periphery of the thimble, for engagement with the ends of the cross-head when it is clamped upon said thimble.

5. In an adjustable handle-bar, the combination with the steering-post, and the hollow 95 cross-head thereon slotted in alinement with each other, and a spring-pressed slide-bar adapted to engage a perforation in the handle-bar within the hollow cross-head, of a rectangular-bodied bolt passing across the post 100 through perforations thereof to clamp it and the hollow cross-head, said bolt being transversely perforated for the loose reception of the slide-bar.

JESSE ALEXANDER.

Witnesses:

DAVID M. EDSALL,  
CHARLES T. O'NEILL.