

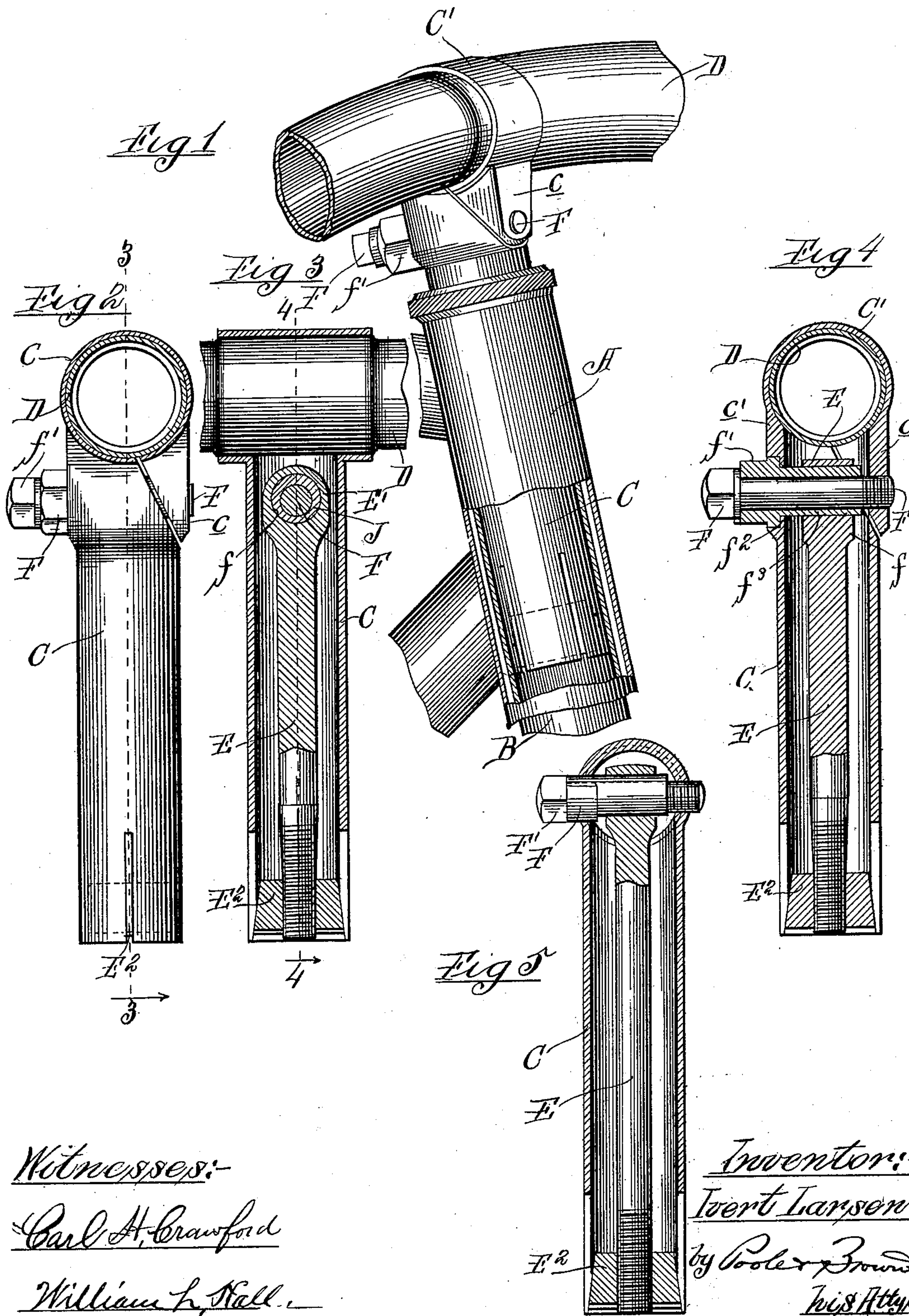
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Patented June 13, 1899.

I. LARSEN.
ADJUSTING DEVICE FOR HANDLE BARS.

(Application filed July 16, 1898.)

(No Model.)



Witnesses:-

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UNITED STATES PATENT OFFICE.

IVERT LARSEN, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE CHICAGO HANDLE BAR COMPANY, OF SAME PLACE.

ADJUSTING DEVICE FOR HANDLE-BARS.

SPECIFICATION forming part of Letters Patent No. 626,836, dated June 13, 1899.

Application filed July 16, 1898. Serial No. 686,173. (No model.)

To all whom it may concern:

Be it known that I, IVERT LARSEN, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful
5 Improvements in Adjusting Devices for Handle-Bars; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference
10 marked thereon, which form a part of this specification.

This invention relates to an improvement in clamping devices for securing the handle-bar post to the front-fork spindle of a bicycle.
15 It refers more particularly to an improved construction in devices of this character by which the handle-bar post may be easily and quickly removed from or rigidly secured in the front-fork spindle and adjusted in position with respect to said spindle.
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The invention consists in the matters hereinafter set forth and more particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective
25 view, partly in section, of a bicycle steering-head embodying my invention. Fig. 2 is a side view of the handle-bar post. Fig. 3 is a cross-section taken on line 3 3 of Fig. 2, showing interior parts of the device. Fig. 4 is a
30 view in cross-section taken on the line 4 4 of Fig. 3. Fig. 5 is a cross-section of a handle-bar post embodying another form of my invention.

As shown in said drawings, A designates
35 the steering-head of a bicycle-frame, B the front-fork spindle, which passes through the said steering-head and is mounted to turn therein in the usual manner, and C the tubular handle-bar spindle or post, which is attached to the handle D and which enters the
40 fork-spindle and is provided with clamping means by which it may be secured therein. The said handle-bar post C is tubular and provided at its lower end with a plurality of
45 longitudinal slits or slots adapted to make the said lower end thereof expansible, and within said lower end of the tubular post is located a tapered plug E², which operates to expand the posts surrounding it into contact
50 with the inner surface of the fork-spindle.

The lower end portion of the said handle-bar post is made of uniform exterior diameter. The interior diameter is greatest at the lower end of the said handle-bar post, the said end being reamed out to form a short inward taper adapted to fit the tapered plug E², so that
55 when the plug is drawn inwardly or upwardly the lower part of the said handle-bar post will be brought into clamping engagement with the fork-spindle. The head of said post
60 is provided with a transverse split clamping-sleeve C', adapted to receive and rigidly hold the detachable and adjustable handle-bar D. The said sleeve C' is made integral with the
65 slot or opening therein adjacent to the handle-bar post. Said sleeve is provided with a lug c, extending downward at one side of the said post. The said lug is provided with a
70 screw-threaded aperture extending there-through at right angles to the post and opposite to and concentric with a larger circular
aperture (not screw-threaded) formed in the opposite side of the post and containing a
75 shoulder c'. The said apertures are adapted to receive a clamping-bolt F for the split sleeve and an eccentric sleeve f for actuating the plug E², as hereinafter more particularly
described. As a convenient way of constructing the said split sleeve it is made
80 integral on both sides with the said handle-bar post, and when otherwise complete the side containing the screw-threaded aperture is severed from the post by means of a saw cut
extending from the central lower part of the
85 sleeve downwardly and laterally through the front face of the post, said cut being in a plane parallel with the axis of the sleeve. The part severed from the post constitutes the
lug referred to.

The bolt F is provided at one end with an
90 angular head adapted to be engaged by a wrench and is screw-threaded at the other end to correspond with and fit the screw-threaded aperture in the lug c. Surrounding the said bolt is the eccentric sleeve f,
95 which is adapted to fit and turn upon the said bolt, as shown in Figs. 3 and 4, and, together with the said bolt, be inserted into the transverse aperture in the head of the handle-bar post. The said sleeve f is provided
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in its central part with a cylindrical portion forming a shoulder f^2 , concentric with the bore of the said sleeve and the bolt therein and adapted to be engaged by the shoulder c' in the aperture in the handle-bar post heretofore described. The exterior end f' of the said sleeve adjacent to the head of the bolt F is angular and adapted to be engaged by a wrench. The inner end f^3 of the said sleeve is cylindrical and eccentric to the bore thereof and the bolt therein. The length of the said eccentric part f^3 of the sleeve f is less than the exterior diameter of the handle-bar post, thereby permitting the bolt F, acting against the angular head f' of the sleeve as a bearing surface or shoulder, to draw the lug c of the split sleeve toward the said handle-bar post, thereby firmly gripping the handle-bar D in any desired position.

A connecting-rod or pitman E joins the plug E^2 with the eccentric portion f^3 of the sleeve f . Said connecting-rod is provided with a head E' , having a cylindrical bore extending therethrough, the central axis of the said bore being at right angles with the central axis of the connecting-rod E. The said bore is of the same diameter of the eccentric portion f^3 of the sleeve heretofore described and is adapted to receive the same, permitting the said sleeve to turn freely within the said head E' . The length of the connecting-rod E is such that when engaged with the sleeve f in the aforesaid manner the lower or screw-threaded end thereof shall extend to the lower end of the handle-bar post, as shown in Figs. 3, 4, and 5. The said plug E^2 is made in the shape of a frustum of a cone, the greater base being the outward side of the plug, the diameter thereof being equal to the greatest interior diameter of the handle-bar post C, or, in other words, the interior diameter at the extremelower end of the said handle-bar post, as hereinbefore described. The taper of the said nut E^2 is similar to and corresponds with the inner taper of the handle-bar post, so that the said nut E^2 when drawn upwardly in said handle-bar post is thereby adapted to expand the said post C, causing the same to be firmly clamped or gripped within the front-fork spindle B. For the purpose of accurately adjusting the said nut E^2 in said handle-bar post C the said nut is provided on its lower or greater base with a slot coincident with the diameter of the nut, adapted to receive the blade of a screw-driver, whereby the said nut may be adjusted to any desired position before the said handle-bar post is inserted into the front-fork spindle of the bicycle.

As a modification of the above-described invention the handle-bar post and handle-bar may be made integral and the sleeve f may be omitted from the construction, as seen in Fig. 5. In that event all parts within the said handle-bar post will be constructed as hereinbefore described, except that the bolt may be constructed with the central cy-

lindrical eccentric-shaft adapted to actuate the connecting-rod E vertically in the same manner that the connecting-rod E may be actuated vertically by the turning of the said eccentric sleeve f within the head of the said connecting-rod E, as hereinbefore described.

In the use of the devices described by means of the bolt F, which draws the lug c inward toward the post, the said handle-bar will be firmly gripped and held. The sleeve f may be turned until its longest radius is directed downward in the tube of the handle-bar post and parallel with the sides of the said handle-bar post. It will be seen that in this position the connecting-rod E and the nut E^2 thereon will be carried downward to their lowermost position. The nut E^2 will now be turned up on said connecting-rod E until it enters and is in position to dilate or expand the slotted end of the handle-bar post. The handle-bar post is then inserted in the front-fork spindle, as shown in Fig. 1. The post should fit snugly in the upper end of said front-fork spindle. The handle-bar post is then adjusted with regard to height and its relation to the frame. By means of a wrench engaging the angular end f' of the sleeve the said sleeve is turned half around or to a position where the longest radius will point upward and be parallel to the head of said post. The nut E^2 will thereby be drawn upwardly into the end of the said handle-bar post and the sides expanded into binding contact with the interior of the front-fork spindle. The handle-bar post will be thereby firmly held.

It is obvious that the acts of securing the handle-bar in proper adjustment and of adjusting the handle-bar post in the front-fork spindle may be performed in one and the same operation by means of a wrench engaging the angular heads of the pivot-bolt F and the sleeve f at one and the same time. The said adjustments will, however, usually be made separately, inasmuch as the sleeve f turns readily upon the pivot-bolt F, so that either adjustment may be made without disturbing the other. An important feature of the construction, however, is the clamping action of the bolt F upon the outer end of the sleeve f . The said sleeve-head is clamped firmly between the shoulder c' of the handle-bar post and the head of the bolt F, thereby preventing the said eccentric sleeve from turning backward, and thereby releasing the binding contact of the handle-bar post and front-fork spindle.

I claim as my invention—

1. The combination of a tubular handle-bar post which is split at its lower end and provided at its upper end with a split clamping-sleeve for the handle-bar, a tapered plug in the split lower end of the handle-bar post, a clamping-screw for the split sleeve, mounted transversely in the upper part of the post and an eccentric sleeve surrounding said clamping-bolt and connected with the said plug.

2. The combination of a tubular handle-bar post which is split at its lower end and provided at its upper end with a split clamping-sleeve, a vertically-movable tapered plug in the lower end of the said post, a clamping-bolt for the split sleeve, mounted transversely in the upper part of the post, an eccentric sleeve surrounding said clamping-bolt, and connected with the tapered plug, said eccentric sleeve being extended at one end through the post and provided with a shoulder which bears against the post, and the clamping-bolt being provided outside of the said enlargement of the eccentric sleeve with a shoulder which bears against the outer end of the said sleeve.

3. A tubular handle-bar post split at its lower end and provided with a split clamping-

sleeve at its upper end, a tapered plug in the lower end of the said post, a clamping-bolt mounted in the upper part of the post, a rotative eccentric also mounted in the upper part of the post, said eccentric being connected with and operating the tapered plug and means by which the tightening of the clamping-bolt serves to clamp and hold from rotation the said eccentric.

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two witnesses, this 8th day of July, A. D. 1898.

IVERT LARSEN.

Witnesses:

C. CLARENCE POOLE,
R. CUTHBERT VIVIAN.