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J. KNAPE.

SEAT POST CLAMP.

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INVENTOR.

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WITNESSES.

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JOHN KNAPE, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR TO THE GRAND RAPIDS CYCLE COMPANY, OF SAME PLACE.

SEAT-POST CLAMP.


Application filed May 5, 1899. Serial No. 718,854. (No model.)

To all whom it may concern:

Be it known that I, JOHN KNAPE, a citizen of the United States, residing at Grand Rapids, in the county of Kent, State of Michigan, have invented certain new and useful Improvements in Seat-Post Clamps; 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 letters of reference marked thereon, which form a part of this specification.

This invention relates to seat-post clamps for bicycles, and pertains to that class of clamps called "binders," whereby the seat-post may be securely locked in position after vertical and rotary adjustment in the socket which receives it.

The object of the invention is to provide simple and efficient means whereby the seat-post may be securely clamped after adjustment at both ends of its embracing-sleeve, thereby securely retaining said seat-post in any position to which it may be adjusted, the arrangement being such as to effect the clamping of the post by simply turning the screw-cap through which the seat-post passes and which embraces the upper end of the seat-post. This object is attained by the device illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal sectional view through the seat-mast of a bicycle in which my improved clamp or binder is inserted, the seat-post within said binder appearing in elevation. Fig. 2 is an elevation of the upper end of the seat-mast and the separate parts comprising the clamp or binder withdrawn therefrom. Fig. 3 is a longitudinal section through the parts comprising the clamp. Fig. 4 is a horizontal section, as on line 44 of Fig. 1, looking in the direction indicated by the arrows.

Referring to the letters of reference, A designates the seat-mast of a bicycle-frame, in which the seat-post B, adapted to carry the bicycle-saddle, is supported. For the purpose of clamping and holding said seat-post firmly within the seat-mast and at the same time provide for the vertical adjustment of said post to vary the height of the saddle of the rider I employ a cylindrical sleeve C, adapted to slide within the opening of the seat-mast and having longitudinal slots a opening through the lower end of said sleeve and extending upwardly toward the upper end thereof. Said sleeve is also provided at the upper end with an external thread b and at the lower end with a diametrically-extending beveled flange c, projecting from its inner wall. Adapted to fit within the sleeve C is a cylindrical bushing D, having a series of slots d opening through its upper end and extending downwardly to a point adjacent the lower end thereof. Said bushing is also provided at its upper end with a beveled outwardly-projecting flange e, while the outer wall of said bushing, at its extreme lower end, is tapered inwardly, as at f.

E designates a binding-nut in the form of a screw-cap having a central aperture F, through which the seat-post is adapted to pass freely, and with an annular diametrically-extending shoulder g, adapted to engage the upper end of the bushing D. The maximum diameter of the opening in the screw-cap E is of such size as to receive the upper threaded end of the sleeve C and is tapped to enable it to be screwed onto said threads, as shown in Fig. 1.

In the operation of this device it will be understood that the sleeve C, with the bushing D therein, is entered within the upper end of the seat-mast and the screw-cap E is screwed onto the upper end of said sleeve. The seat-post B is passed through the opening in the cap and into the bushing D, in which said seat-post is adapted to fit, so as to permit it to be moved up and down and rotated to effect a proper adjustment of the saddle as to height and alignment with the frame. To securely clamp the seat-post after adjustment, a wrench applied to the hexagonal faces h of said cap is and the cap screwed downward upon the sleeve, carrying the shoulder g of said cap into engagement with the upper end of the bushing D and forcing said bushing downward, causing the beveled flange e at the upper end of said bushing to engage the slightly-flaring wall e' at the upper end of the sleeve C, thereby contracting upon the seat-post the upper end of the bushing, through which the
slots d extend. At the same time the tapered lower end f of said bushing, engaging the diametrical flange c at the lower end of the sleeve C, through which the slots a extend, will expand said sleeve at its lower end and crowd its outer wall forcibly against the inner wall of the seat-mast, whereby a double clamp is provided, through the medium of which the seat-post is securely bound at the lower end, as well as at the upper end thereof, making a firm and rigid fastening therefor.

When it is desired to adjust the seat-post, the screw-cap is unscrewed sufficiently to relieve the pressure upon the binding parts, when the abruptness of the engaging beveled faces will cause said sleeve and bushing to separate sufficiently to relieve the seat-post, enabling it to be readily moved vertically or rotated, as desired.

The screw-cap E is provided with a depending flange i, which is adapted to embrace the top of the seat-mast and afford a pleasing finish for the upper end thereof.

Having thus fully set forth this invention, what is claimed is—

In a seat-post binder, the combination of the slotted sleeve provided with a beveled diametrical flange extending from its inner wall at its lower end a tapered inner wall and an external thread at its upper end, a slotted bushing adapted to enter said sleeve, said bushing being tapered at its lower end and provided at its upper end with an outwardly-extending flange, a screw-cap having an aperture therethrough and adapted to screw onto the upper end of said sleeve, said cap being provided with a horizontal shoulder adapted to engage the upper end of said bushing.

In testimony whereof I sign this specification in the presence of two witnesses.

JOHN KNAPE.

Witnesses:
M. D. HOOGESTEGER,
Wm. H. BENJAMIN.