No. 622,766. Patented Apr. 11, 1899.

B. D. HARRIS.

HANDLE BAR CLAMP.

(Application filed Apr. 13, 1898.)

(No Model.)

Fig. 1.

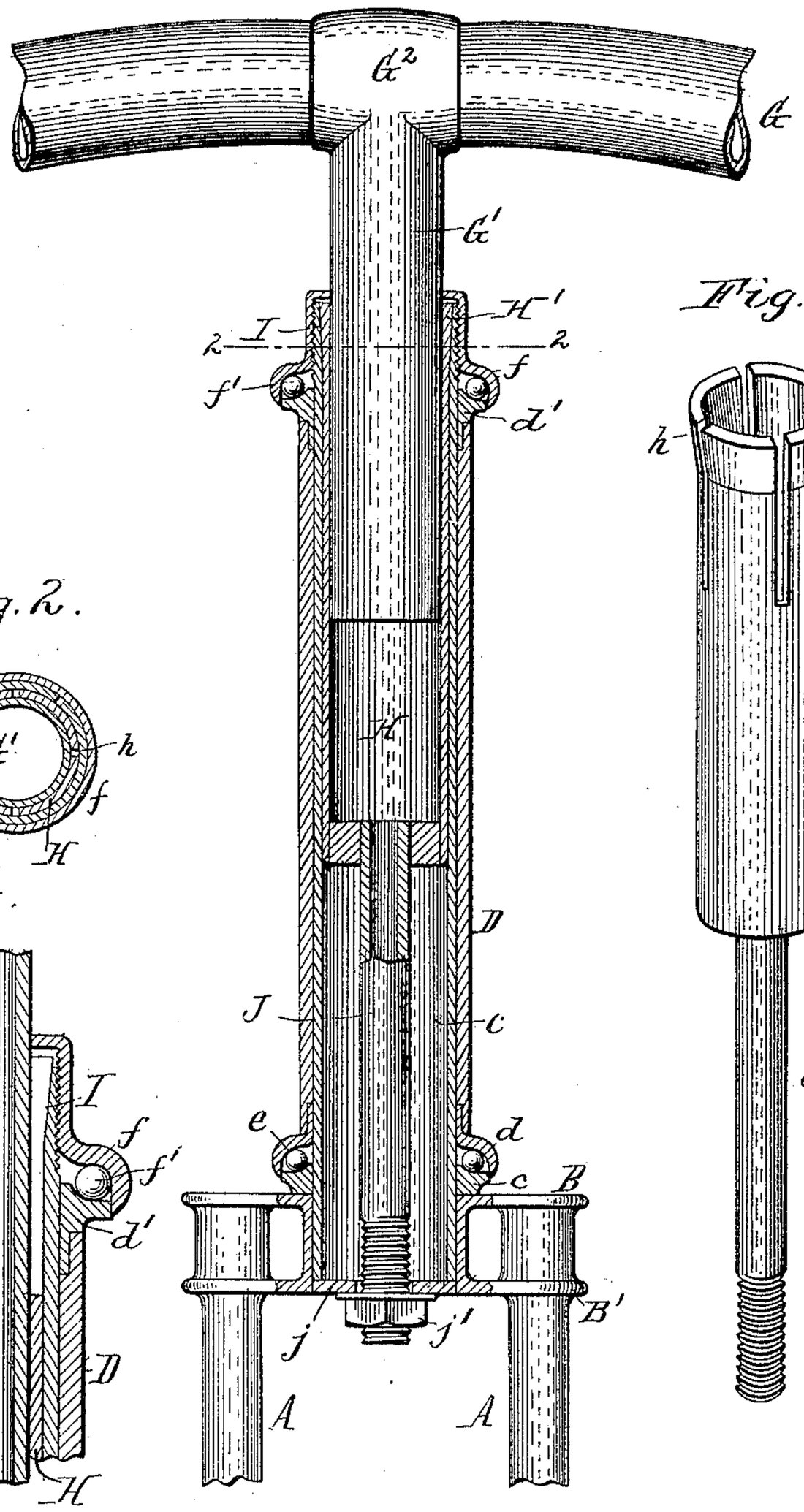
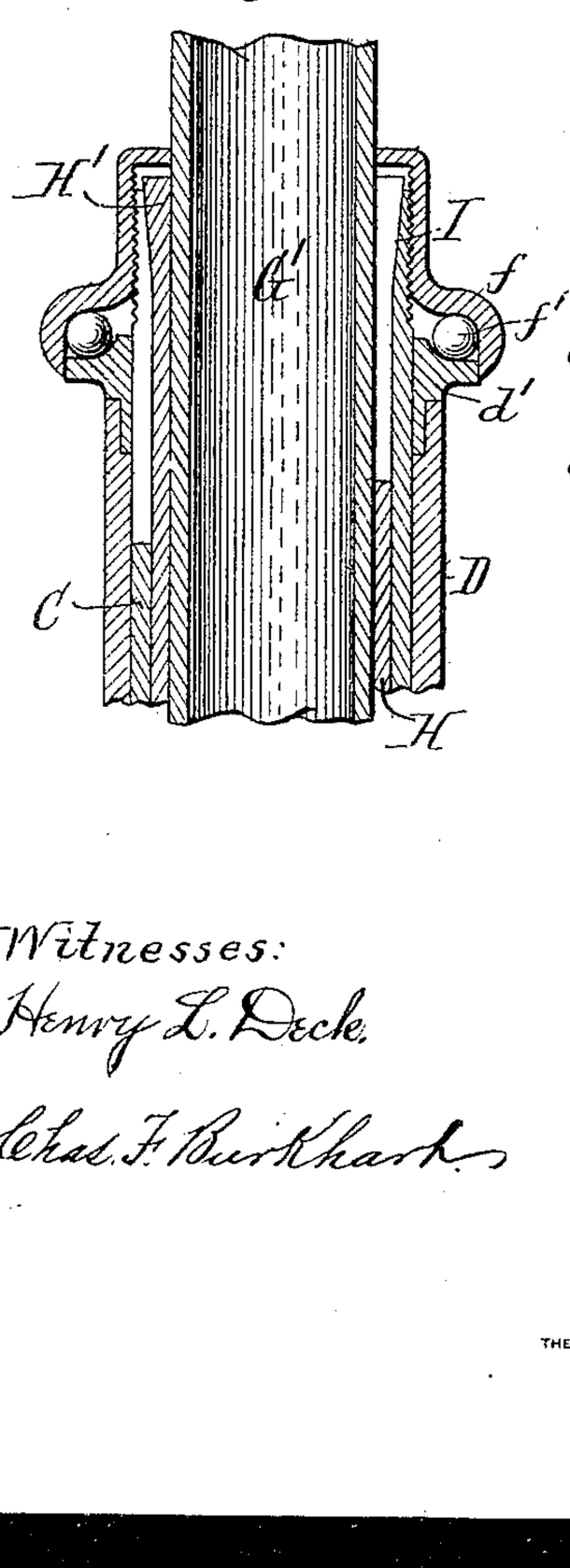


Fig. 2.

Fig. 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

BERT D. HARRIS, OF ST. CATHARINES, CANADA.

HANDLE-BAR CLAMP.

SPECIFICATION forming part of Letters Patent No. 622,766, dated April 11, 1899.

Application filed April 13, 1898. Serial No. 677,468. (No model.)

To all whom it may concern:

Be it known that I, BERT D. HARRIS, a citizen of the United States, residing at St. Catharines, in the county of Welland, in the Province of Ontario, Dominion of Canada, have invented a new and useful Improvement in Handle-Bar Clamps, of which the following is a specification.

This invention relates to the clamping devices employed for securing the shank or stem of a velocipede handle-bar to the steering-head.

The object of my invention is the provision of a reliable clamping device of simple construction which dispenses with the usual bolt or other locking means at the top of the steering-head and which can be conveniently manipulated for securing and releasing the handle-bar.

In the accompanying drawings, Figure 1 is a sectional elevation of a steering-head provided with my improved clamp. Fig. 2 is a cross-section thereof in line 2 2, Fig. 1. Fig. 3 is a detached perspective view of the split clamping tube or sleeve. Fig. 4 is an enlarged vertical section of the upper portion of the steering-head.

Like letters of reference refer to like parts in the several figures.

A represents the members of the front-wheel fork of a velocipede, which members in the construction shown in the drawings are connected at their upper ends by the well-known parallel bridge-pieces B B′, although the same may be united by any other suitable connection or crown-piece.

C is the hollow stem extending upwardly from the upper bridge-piece B and arranged to turn in the usual fixed steering-head D, secured to the front portion of the velocipede-frame. Ball-bearings of any suitable construction may be interposed between the steering-head and the fork-stem C. In the construction shown in the drawings the steering-head is formed at its lower end with a ball case or cup *d*, and the fork-stem is provided at its base with a cone *c*, between which and said case the balls *e* are arranged. The upper ball-bearing (shown in the drawings) consists of a cone *d′*, pressed into the upper end of the steering-head, a screw-cap *f*, applied to the projecting upper end of the fork-stem, and balls *f′*, interposed between the cap and the cone.

G is the handle-bar, and G′ the usual cylindrical shank, carrying at its upper end a lug or socket G^2, in which the handle-bar is secured either fixedly or adjustably, as may be desired.

H is a clamping-tube fitted within the hollow fork-stem C and adapted to receive and clamp the shank of the handle-bar. This clamping-tube is provided at its upper end with a head or enlargement H′, having a conical or downwardly-tapering outer surface, which is seated in a correspondingly-shaped cavity or seat I, formed in the upper end of the fork-stem, as shown. The conical head of this tube is split lengthwise by one or more slits *h*, so that upon forcing the tube downwardly in the stem the tongues or metal between the slits *h* are contracted by the tapering or wedging surfaces of the tube and the stem, causing such tongues to tightly bind against the shank of the handle-bar and firmly securing the same within the clamping-tube and at the same time clamping the tube within the fork-stem. The tongues or portions of metal formed by the slits are sufficiently elastic to permit the requisite contraction and expansion thereof. The clamping-tube is drawn downward for clamping the parts by a longitudinal bolt J, extending downwardly from the closed lower end of the tube and passing through a head or washer *j*, which closes the lower end of the fork-stem, as shown in Fig. 1. The nut *j′* of this bolt bears against the under side of the washer *j*, where it can be conveniently turned by a suitable wrench for clamping or releasing the handle-bar shank. Upon loosening the nut *j′* the slitted upper portion of the clamping-tube is permitted to expand, thus releasing the handle-bar shank.

The upper portion of the hollow stem C is preferably split or slitted, as shown, so that the elastic tongues formed by the slits are expanded within the cap *f* in the act of tightening the clamping-tube, thereby securely clamping the cap to the stem. This cap may be formed with an upwardly-extending collar, which surrounds the shank of the handle-bar, as shown in Fig. 1.

My improved clamping device affords an extensive frictional or clamping surface be-

tween the handle-bar shank and the tube in which it is fitted, and it also forms a very sightly construction, as it leaves the upper end of the steering-head free from lock-nuts and bolts, the only part employed at the top of the steering-head being the cap for inclosing the balls of the upper bearing.

I claim as my invention—

1. The combination with the hollow fork-stem, of a contractible clamping tube or sleeve arranged in said stem and adapted to receive the shank of a handle-bar, said clamping-tube and fork-stem being provided with contiguous tapering surfaces which cause the tube to contract and bind upon the handle-bar shank by a longitudinal movement of the tube in the stem, and a tightening device which operates to draw said clamping-tube downwardly in the fork-stem and which is accessible at the lower end of the steering-head, substantially as set forth.

2. The combination with a wheel-fork and a hollow stem connected therewith and provided with a tapering seat, of a clamping-tube fitted in said stem and having a split, tapering portion arranged in the tapering seat of said fork-stem, and a clamping-bolt extending downwardly from said clamping-tube, and passing through the upper portion of the fork, substantially as set forth.

3. The combination with a wheel-fork and a hollow stem projecting upwardly therefrom and having its upper end split and provided with a tapering seat, of a clamping-tube fitted in said stem and having a split tapering upper portion arranged in the tapering seat of said fork-stem, a cap applied to the split end of the fork-stem, and a clamping-bolt extending downwardly from said clamping-tube and passing through the crown or upper end of the wheel-fork and provided with a nut which bears against the under side of the fork-crown, substantially as set forth.

Witness my hand this 9th day of April, 1898.

BERT D. HARRIS.

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