

No. 650,555.

Patented May 29, 1900.

W. H. CROSBY.
VELOCIPED FRAME.

(Application filed Oct. 23, 1899.)

(No Model.)

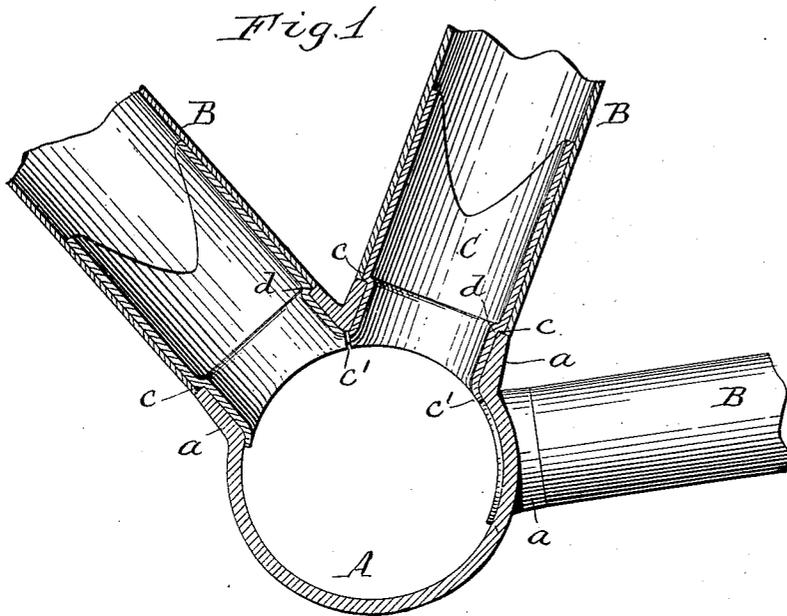
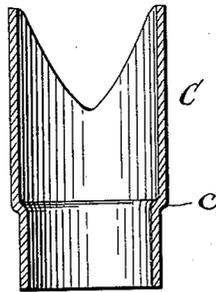


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

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VELOCIPED-FRAME.

SPECIFICATION forming part of Letters Patent No. 650,555, dated May 29, 1900.

Application filed October 23, 1899. Serial No. 734,476. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. CROSBY, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Velocipede-Frames, of which the following is a specification.

This invention relates to the joints or connections which are employed for uniting the tubular members of velocipede-frames—such, for instance, as the crank-shaft hanger and adjoining tubes—and in which a reinforcing or connecting thimble is employed which is fitted in a projecting collar or nipple of the hanger and receives the adjacent tube member of the frame. In such joints the ends of the tube members abut against the outer ends of the nipples carried by the hanger. These nipples are ordinarily drawn out of the body of the hanger, and the latter is made of heavier stock than the tubing of the frame, and in order to form a flush joint between the hanger-nipples and the tubing it has hitherto been necessary to reduce the thickness of the nipple to that of the tubing by filing or otherwise, which increases the cost of the frame. The thimbles heretofore employed in such joints are also liable to be moved inwardly out of place in the nipples of the hanger in passing the tube members over them, rendering it necessary to properly place the nipples before brazing the parts together.

The object of my invention is to provide a connection of this character which produces a flush joint between the nipple of one member and the end of the adjoining member without the necessity of filing or fitting any of the parts and in which the thimble is at the same time reliably held against inward displacement in the nipple of the hanger or other member, thereby reducing the cost of the velocipede-frame and facilitating the assemblage of the parts of the joint.

In the accompanying drawings, Figure 1 is a sectional side elevation of a crank-shaft hanger and the adjoining tubes of a velocipede-frame united by my improved joint, the rear joint being shown in elevation and the front and intermediate joints in longitudinal section. Fig. 2 is a detached vertical section of one of the thimbles, showing the form thereof before its inner end is upset.

Like letters of reference refer to like parts in both figures.

A is a crank-shaft hanger of the usual cylindrical form and *a* the customary short collars or hollow nipples which project from the body of the hanger at the proper angle to meet the adjacent frame-tubes B.

C is one of the thimbles whereby the frame-tubes B are securely connected with the hanger. The thimble fits snugly in the nipple of the hanger and is provided with an external annular shoulder or offset *c*, which bears against the outer end of the nipple, thereby forming a stop, which limits the inward movement of the thimble in the nipple. The inner end of the thimble is flanged or upset against the inner side of the hanger, as shown at *c'*, whereby the same is confined against outward displacement in the nipple. The shoulder *c* is formed by reducing the inner portion of the thimble, and this reduced portion is originally straight or unflanged, as shown in Fig. 2. The reduced portion of the thimble is inserted in the nipple from the outer side of the hanger until its shoulder *c* abuts against the outer end of the nipple, and its inner end is then upset from the inner side of the hanger, as shown in Fig. 1. The frame-tube B is fitted over the projecting portion of the thimble and abuts against the outer end of the nipple, the abutting ends of the nipple and the tube being flat or straight, as shown. The stock of the hanger is heavier or of a larger gage than that of the frame-tubes B, and the nipples *a*, which are drawn from the body of the hanger, are therefore also thicker than the tubes. The nipples are of the same external diameter as the tubes, so that when a tube and its corresponding nipple are joined together they are flush on their outer sides, and an offset or shoulder *d* is formed at the outer end of the nipple on the inner side thereof, this offset being as wide as the difference in thickness between the nipple and the tube.

The enlarged outer portion of the thimble is made of the proper diameter to snugly fit the interior of the frame-tube, whereby the shoulder *c* of the thimble corresponds in width to the offset *d* at the outer end of the nipple and occupies the space at the end of the nipple not occupied by the end of the tube. By this construction a strong flush joint is

formed between the nipple and the tube without requiring the outer end of the nipple to be filed or otherwise reduced to the thickness of the tube, the difference in the gage or thickness of the nipple and the tube being compensated for by the shoulder of the thimble, which is made wider or narrower, according to the-gage of the tubing which it is desired to use. This produces a less expensive joint than one which requires the parts to be filed or fitted. The shouldered construction of the thimble also facilitates the assemblage of the parts preparatory to brazing them together, as the shoulder of the thimble prevents the latter from shifting inwardly out of place in passing the frame-tube over the same. As the shoulder of the thimble and the end of the frame-tube both abut against the outer end of the nipple, these abutting faces can all be made flat or straight and require no special fitting, rendering the joint comparatively inexpensive.

While I have herein shown and described my improved joint in connection with a bicycle-hanger, the same is obviously applicable to other members of the frame—such, for instance, as the steering-head and the tubes connected therewith.

I claim as my invention—

1. In a velocipede-frame, the combination with two tubular members arranged at an angle to each other, one of said members being provided with a projecting nipple, of a thim-

ble fitting into said nipple and having its inner end upset against the inner side of the last-mentioned member and having an external shoulder which bears against the outer end of said nipple and is narrower than the thickness of the nipple, the other of said frame members fitting over the projecting portion of said thimble and abutting at its inner end against the end of said nipple, substantially as set forth.

2. In a velocipede-frame, the combination with a tubular member provided with a projecting collar or hollow nipple having a flat outer end, of a reinforcing-thimble having a reduced inner portion fitting into said nipple and forming with the large outer portion of the thimble a flat shoulder which bears against the flat outer end of said nipple and which is narrower than the thickness of the nipple, the inner end of the thimble being upset against the inner side of said member, and a second tubular member fitting over the large projecting portion of said thimble and having a flat end which abuts against the flat outer end of said nipple, substantially as set forth.

Witness my hand this 20th day of September, 1899.

WILLIAM H. CROSBY.

Witnesses:

JNO. J. BONNER,
CLAUDIA M. BENTLEY.