

(No Model.)

2 Sheets—Sheet 1.

E. J. GULICK.
CLAMPING DEVICE.

No. 579,265.

Patented Mar. 23, 1897.

Fig. 1.

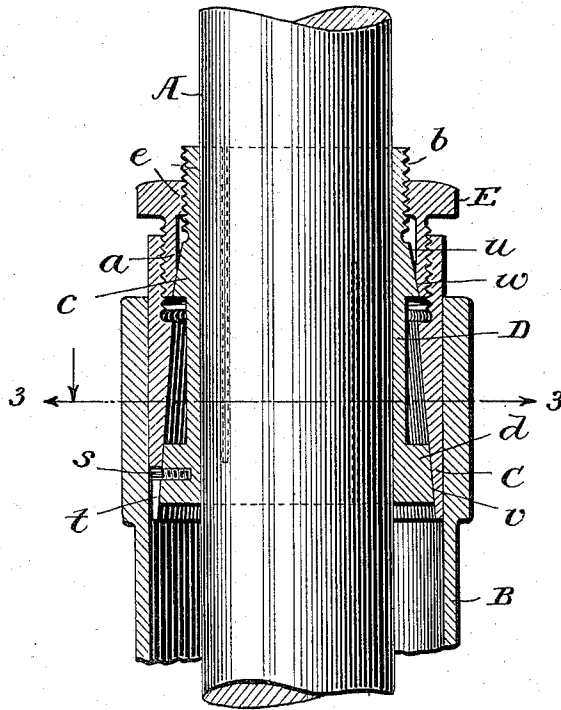
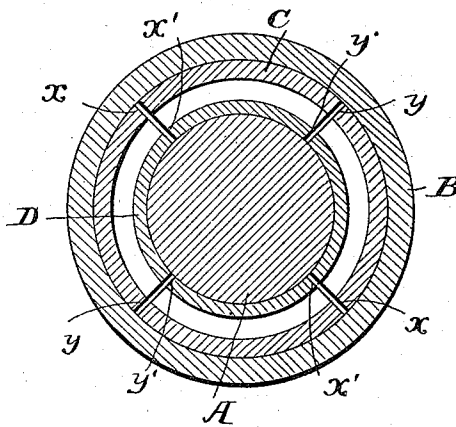


Fig. 3.



Witnesses
J. G. Hinkel
T. A. C. Stearns

Inventor
Edward J. Gulick
By *Foster Freeman*
Attorneys

(No Model.)

2 Sheets—Sheet 2.

E. J. GULICK.
CLAMPING DEVICE.

No. 579,265.

Patented Mar. 23, 1897.

Fig. 2.

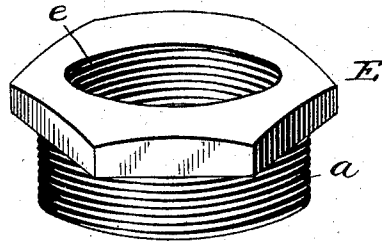


Fig. 4.

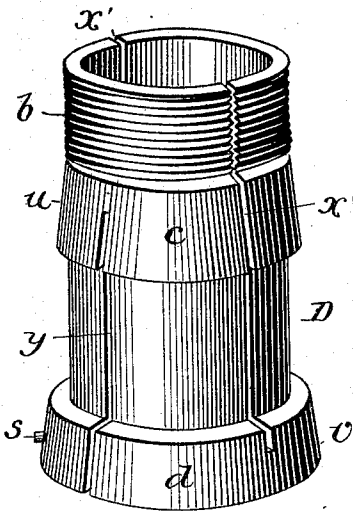
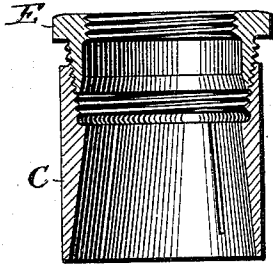
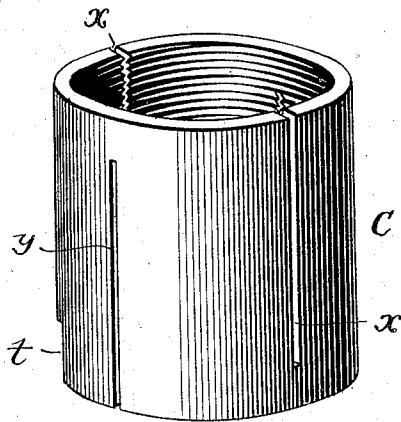
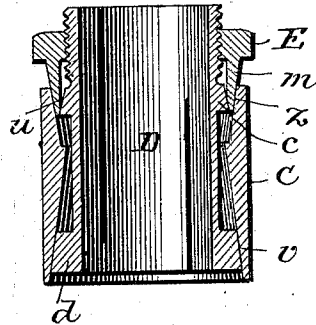


Fig. 5.



Witnesses

J. G. Hinkel
F. W. Stevens

Inventor

Edward J. Gulick

By Foster Freeman

Attorneys

UNITED STATES PATENT OFFICE.

EDWARD J. GULICK, OF JAMESTOWN, NEW YORK, ASSIGNOR TO THE
FENTON METALLIC MANUFACTURING COMPANY, OF SAME PLACE.

CLAMPING DEVICE.

SPECIFICATION forming part of Letters Patent No. 579,265, dated March 23, 1897.

Application filed June 19, 1896. Serial No. 596,203. (No model.)

To all whom it may concern:

Be it known that I, EDWARD J. GULICK, a citizen of the United States, residing at Jamestown, in the county of Chautauqua and State of New York, have invented certain new and useful Improvements in Clamping Devices, of which the following is a specification.

My invention is an improved clamping device adapted to be used wherever a post or bar is to be clamped in position after vertical or rotary adjustment in its socket; and my invention consists of two slit sleeves and a nut, all constructed as fully set forth hereinafter, so that one of the sleeves will be contracted around the bar and the other expanded within the socket by one movement of the nut, and the outer sleeve will be contracted and the inner sleeve expanded by the reverse movement of the nut, as illustrated in the accompanying drawings, in which—

Figure 1 is a vertical sectional elevation showing a bar and a socket-piece with my improved clamping device. Fig. 2 is a view in perspective illustrating the different parts of the clamping device. Fig. 3 is a cross-sectional plan on the line 3 3, Fig. 1. Fig. 4 is a sectional elevation of part of the device, showing a modification; and Fig. 5 is a sectional elevation showing another modification.

A represents a bar or tube, (it may be the adjustable seat-supporting bar of a bicycle,) and *b* represents another portion of any piece of machinery or article in which there is a cylindrical opening or socket. As shown, it may be a part of the frame of a bicycle.

In various kinds of mechanism and devices it becomes important to adjust a cylindrical bar or rod A either vertically or rotatably, or both, in respect to a socket through which it passes and to secure it after adjustment, and to this end I make use of a clamping device which I will now describe.

C is a hollow sleeve or cylinder of metal having one or more slots *x* extending from one end, as the upper end, toward but not completely to the lower end, and one or more slits *y* extending from the opposite end nearly to the upper end, so that under proper certain

conditions either end of the sleeve may be expanded slightly in diameter or contracted.

The cylinder C tapers from a point above the center downward toward the lower end, and at the upper end is internally threaded to receive the threaded flange *a* of an annular nut E.

D is another cylinder or sleeve, which likewise has one or more slots *x'* extending from the upper end nearly to the lower end, and one or more slots *y* extending from the lower end nearly to the upper end.

The upper end of the sleeve D has threads *b*, adapted to internal threads *e* of the annular nut E, and the threaded flange *a* of the said nut has an internal annular beveled face *w*, adapted to the external beveled face *u* of an annular rib *c* upon the sleeve D.

At or near the lower end of the sleeve D is another annular rib *d*, likewise having a beveled face *v*, adapted to the internal tapering or beveled face of the sleeve C.

The threaded portions of the cylinders C and annular nut E are of such a character that when the nut E is upon the threads *b* of the cylinder D and when the threads on the exterior of the flange *a* of the nut engage the internal threads of the cylinder C if the nut is turned in one direction it will move downward upon the threads *b* of the cylinder D, and the inner face *w* of the flange *a* will bear upon the outer beveled face *u* of the rib *c* and will compress or contract the upper end of the cylinder D, causing it to bind firmly upon the post or tube A, which passes through the cylinder D. While the turning of the nut E thus carries it downward upon the cylinder D to contract the upper end of the latter, it also forces or moves down the sleeve C, (which is prevented from turning by a pin *s*, extending from the sleeve D into a slot *t* in the sleeve C,) and as this sleeve C is forced downward over the inclined face *v* of the rib *d* its lower end is expanded so as to bind closely against the inside of the socket of the tube or other part B, while the cylinder D also has its lower end contracted so as to hug closely the post or tube A. Thus the turning of the nut E in one direction binds the cylinder D at both ends against the post

A and also expands the lower end of the sleeve C, so as to bind against the inner face of its socket. If desired, however, the upper end of the sleeve D may also be simultaneously expanded by making the flange *a* slightly tapering, so as to force outward the upper portions of the sleeve C as the nut E is screwed into the sleeve. This construction is illustrated in Fig. 4, which shows only the cylinder C and nut E.

When it is desired to release the parts, the nut is turned in the opposite direction, when the sleeve C will be contracted and the sleeve D will expand.

It will be evident that the sleeves may be of any suitable length and may be of extreme length wherever large frictional surfaces are required.

In the construction shown in Fig. 5 the sleeve D is of the same form substantially as already shown and described, as is also the sleeve C, except that it has no threads at the upper end, but has a tapering seat or face *z*, and instead of a threaded flange *a* upon the nut there is a ring *m*, constituting an annular wedge beveled in both directions, and which when forced downward bears upon the face *u* of the rib *c* to contract the upper end of the sleeve D and upon the inner face *z* of the sleeve C to expand the upper end of that sleeve, the lower end being expanded by the action of the rib *d* on the sleeve D, as before described. In this construction but a single thread is required, and, if desired, it will be evident that the ring *m* may be connected with the nut E and constitute the flange thereof.

Without limiting myself to the precise construction and arrangement of parts shown and described, I claim as my invention—

1. The combination in a clamping device, of two sleeves having vertical slits extending from opposite ends and fitting one within the other, the inner sleeve having ribs with inclined exterior faces, a nut screwing onto the inner sleeve, and a flange below the nut bear-

ing against the adjacent rib of the inner sleeve and extending into the upper end of the outer sleeve, all substantially as set forth.

2. The combination in a clamping device, of two sleeves one within the other, a nut screwing onto a portion of the inner sleeve, and having an inclined annular face bearing upon an inclined annular face of the inner sleeve, and also having its bearings within the upper portion of the outer sleeve, a rib with an inclined face upon the inner sleeve bearing upon a face near the bottom of the outer sleeve, both sleeves being slit vertically, substantially as set forth.

3. The combination in a clamping device, of a sleeve D slit from each end to near the opposite end, and threaded to receive a nut E, a rib *c* upon the sleeve D having a beveled face for engaging a beveled face of the nut, a surrounding sleeve C also slit from each end toward the opposite end, and having near the lower end an inclined or tapering face, and a rib *d* near the lower end of the sleeve D engaging the inner tapering face of the sleeve C, substantially as set forth.

4. The combination in a clamping device, of a sleeve D slit from opposite ends with inclined faces *u v*, and threaded at one end to receive a nut E having both internal and external threads, sleeve C also slit from each end and threaded interiorly near the top to receive the external threaded portion of the nut E, and with a beveled face to engage the face *v* of the inner sleeve, the said threads being set to impart a downward movement to the sleeve C when the nut E is turned upon the sleeve D to cause it to bear upon the face *u* of said sleeve, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

E. J. GULICK.

Witnesses:

F. L. FREEMAN,
J. J. MCCARTHY.