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E. N. BOWEN.

BINDER FOR HANDLE BARS AND SEAT POSTS OF BICYCLES.

(Application filed Jan. 16, 1899.)

(No Model.)

FIG. 1.

FIG. 3.

FIG. 2.

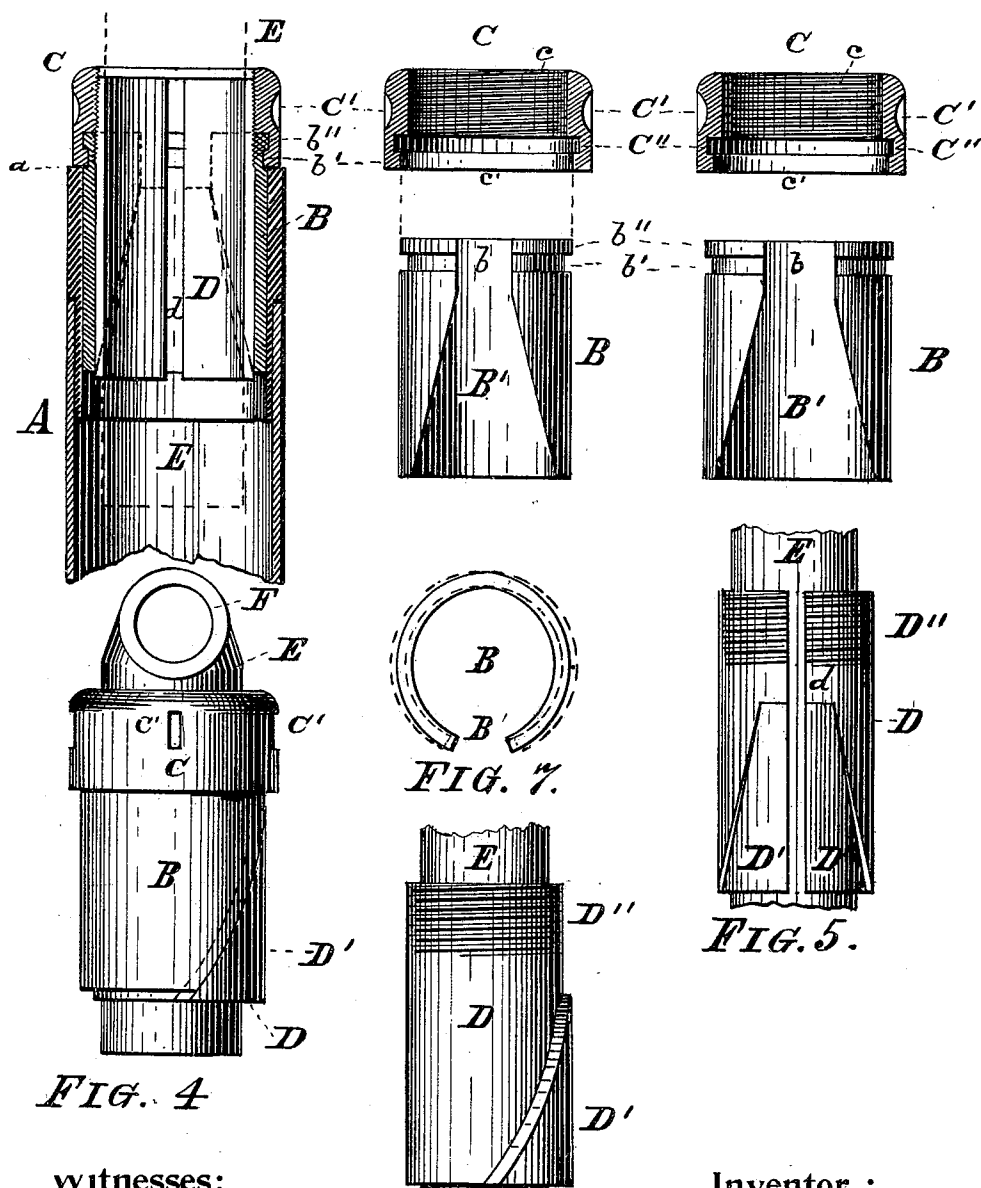


FIG. 4

FIG. 7.

FIG. 5.

FIG. 6.

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UNITED STATES PATENT OFFICE.

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BINDER FOR HANDLE-BARS AND SEAT-POSTS OF BICYCLES.

SPECIFICATION forming part of Letters Patent No. 644,573, dated March 6, 1900.

Application filed January 16, 1899. Serial No. 702,274. (No model.)

To all whom it may concern:

Be it known that I, EPHRAIM N. BOWEN, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Binders for the Handle-Bars and Seat-Posts of Bicycles; and I do hereby declare that the following description of my said invention, taken in connection with the accompanying sheet of drawings, forms a full, clear, and exact specification, which will enable others skilled in the art to which it appertains to make and use the same.

This invention has general reference to improvements in binders for the handle-bars and seat-posts of bicycles; and its object is the production of a simple and efficient means for removably securing the handle-bars or the seat-post to a bicycle.

It consists, essentially, in the novel and peculiar combination of parts and details of construction, as hereinafter first fully set forth and described and then pointed out in the claims.

In the drawings already referred to, which serve to illustrate my said invention more fully, Figure 1 is a longitudinal sectional elevation of my improved binder. Fig. 2 is an elevation of the sleeve and a transverse section of its swiveling nut. Fig. 3 is a similar view showing these parts in a condition for making connection with one another. Fig. 4 is a side elevation of the device ready for insertion into the fork-stem or the seat-post mast of a bicycle. Figs. 5 and 6 are elevations of a fragment of the same, showing the device in different planes. Fig. 7 is a plan of the sleeve detached.

Like parts are designated by corresponding letters of reference in all the various figures.

A in the drawings represents the upper end of a fork-stem, seat-post mast, or similar part to which the handle-bar or seat-post or analogous part E is to be removably secured. This part A has a cylindrical bore and is adapted to receive a sleeve B, consisting of a tube having longitudinally a wide slit *b*, of which the opposing edges are so formed as to resemble an inverted letter V, as clearly shown at B' in Figs. 2 and 3. This sleeve B has near its upper end an annular groove *b'*, so as to

form on said sleeve an annular projection or band *b''*.

C is a nut having in its periphery notches or recesses C' for the reception of a spanner-wrench, by means of which it is manipulated. Its interior bore is provided with an annular groove or recess C'', adapted to engage the collar or band *b''* of the sleeve, and thereby to enable it to revolve upon said sleeve. The upper portion of said nut is internally screw-threaded at *c*, as shown in Figs. 1, 2, and 3.

D is an expander consisting of a cylindrical shell having a longitudinal slit *d*, as illustrated in Fig. 5, at its lower end and projecting from its outer surface and on both sides of said slit *d* inclined projections D' D', the outer edges of which correspond with and are adapted to engage the similarly-constructed slot B' in the sleeve B.

E is the seat-post stem or in case this device is used as a binder for the handle-bars the handle-bar stem. It is cylindrical in its external contour and adapted to fit the cylindrical bore of the expander-shell D a reasonably-close sliding fit.

F is the seat-post bar or the handle-bar of a bicycle.

The sleeve B as well as the shell D are preferably made from a grade of metal possessing such a degree of elasticity as to enable them to expand and contract sufficiently to accomplish the desired results without affecting their resiliency, thereby enabling the sleeve to be contracted, as illustrated in Fig. 7, to allow the nut C being placed over its upper end and then to expand to its original contour, thereby causing the annular band *b''* to engage the annular groove C'' in the nut, whereby these two parts are removably connected one with the other. Now the shell D is passed into the sleeve B through its lower end and the screw-threaded upper portion D'' thereof and caused to engage the nut C, (by suitably revolving the latter,) when the parts are ready for insertion into the seat-post mast A, where the lower surface *c'* of the nut C bears upon the upper surface *a* of the part A, the parts now assuming the position shown in Fig. 1.

To secure the seat-post stem E to the seat-post mast A, the nut C is revolved upon the

sleeve B, which causes the shell D to be drawn upwardly and its inclines D' D' to expand the sleeve B until it snugly fits the bore of the part A. Still further revolving the said nut and drawing up the shell D causes the latter to contract (by the same inclines that caused the expansion of the sleeve B) and to embrace the seat-post stem E until the latter is tightly bound within said sleeve and securely held in position upon said seat-post mast.

To remove the seat-post E, the nut C is revolved in the opposite direction, which causes the shell D to slide downwardly until by expansion it has released the seat-post stem E, when the latter may be withdrawn from said shell; but in this condition the sleeve B is still retained within the seat-post mast by frictional contact therein, which is a very desirable feature in bicycle construction, but it may also be removed by a few further turns of said nut C.

It will be observed that all the parts entering into the construction of this binder may be readily and interchangeably produced at a nominal cost, they being very simple in construction and capable of being made from tubes of proper gage, so that an expander or binder of this improved construction may be marketed, if it be so desired, at a comparatively-low figure.

Having thus fully described my invention, I desire to state, in conclusion, that this device is capable of being used for various other purposes than those specified and that I do not wish to confine myself to the specific uses hereinbefore specified.

I claim as new and desire to secure to me by Letters Patent of the United States—

1. A telescopic clamp comprising an inner part or tube which is screw-threaded at one end and is provided with a longitudinal slot at its opposite end, an exterior member or sleeve also provided with a slot, said inner and outer parts having coacting wedge surfaces at the sides of the slots therein, and a rotative coupling member adapted to give rotative endwise movement to said parts.

2. A telescopic clamp comprising an inner part or tube which is screw-threaded at one end and is provided with a longitudinal slot at its opposite end and with wedge-shaped ribs or projections at the opposite sides of said slot, an outer member or sleeve which is also provided with a longitudinal slot and has oblique surfaces at the opposite sides of said slot adapted to engage the wedge-shaped ribs

of the inner member, and a rotative coupling member or nut engaged with the screw-threads of the inner member and having rotative engagement with the outer member.

3. A telescopic clamp comprising an inner tube screw-threaded at one end and having a longitudinal slot at its opposite end, and provided at either side of said slot with wedge-shaped projections or flanges, an exterior part or sleeve which is split through its entire length and provided with oblique edges adapted for engagement with the oblique edges on said wedge-shaped projections, and a coupling member or nut engaging the screw-threads on the inner sleeve and having connection with the outer sleeve by means of a flange and groove.

4. A telescopic clamp, comprising inner and outer longitudinally-movable clamping members, both of which are expansible and contractible and a coupling-piece adapted to give endwise relative movement to said parts, said inner and outer members being provided with coacting wedge surfaces which operate circumferentially on said parts to expand the outer and contract the inner part.

5. A telescopic clamp comprising inner and outer expansible and contractible parts, a nut having screw-threaded engagement with one of said parts and engaging the other of said parts by means of a radial flange and groove, said inner and outer parts being provided with coacting wedge-shaped surfaces which operate circumferentially on said parts to expand the outer and contract the inner part.

6. A binder of the nature described consisting, in connection with the tubular part A, of a cylindrical sleeve having a single longitudinal slot the opposing edges of which are of inverted-V shape, a revoluble nut at the upper end of said sleeve, and a cylindrical tubular shell having a longitudinal slit, inclined projections on both sides of the said slit adapted to engage the similarly-constructed slot in said sleeve, a screw-thread at the upper end of said shell adapted to engage the nut C, and a coupling connection between the nut and outer member, whereby by revolving said nut the inclined projections on the shell will cause the expansion of the said sleeve and the contraction of said shell.

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Witnesses:

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