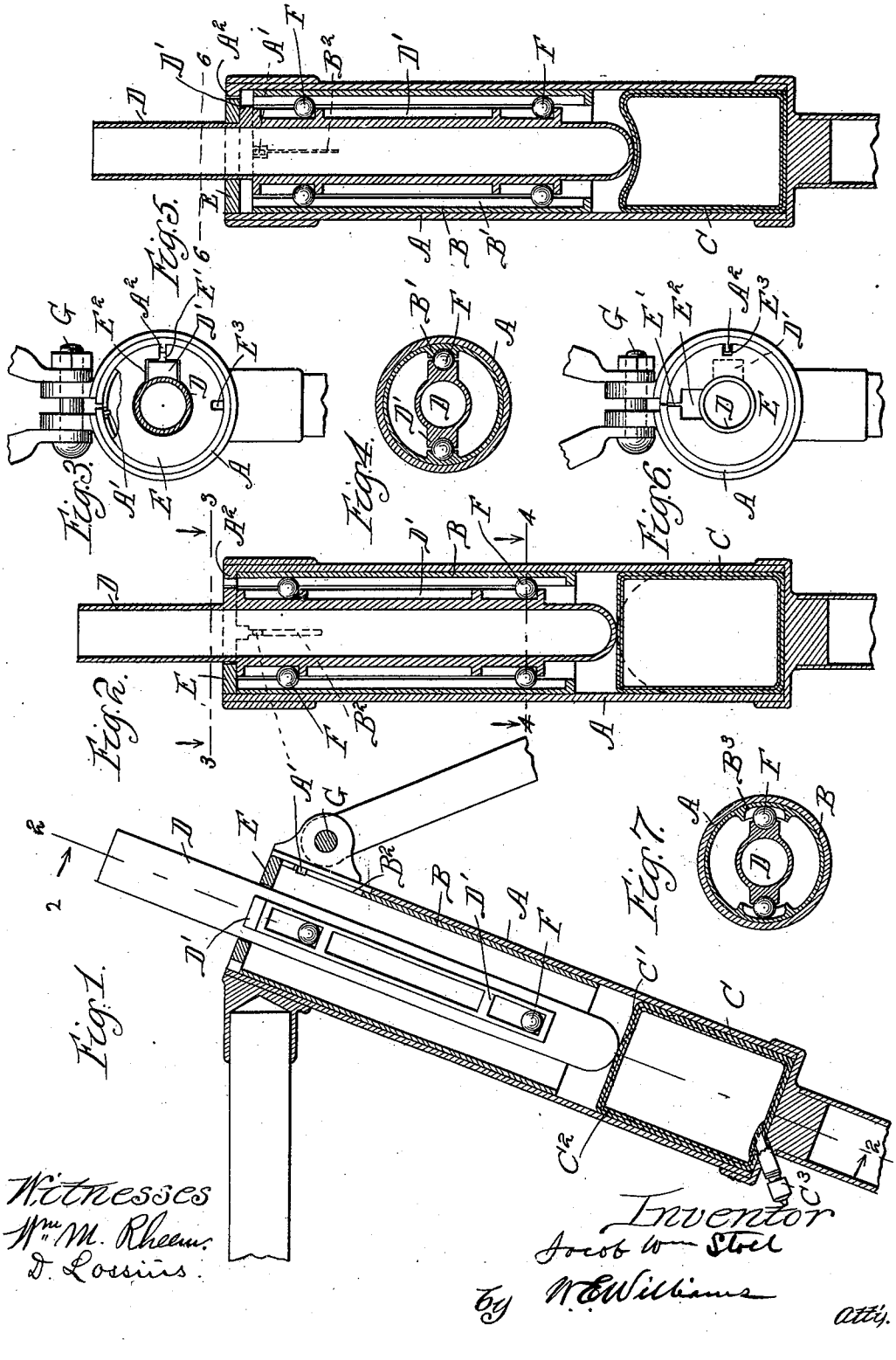
No. 664,184. Patented Dec. 18, 1900.

J. W. STOLL.

PNEUMATIC CUSHIONED SEAT POST FOR BICYCLES.

(Application filed Aug. 24, 1898. Renewed July 23, 1900.)

(No Model.)



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UNITED STATES PATENT OFFICE.

JACOB WILLIAM STOLL, OF CHICAGO, ILLINOIS.

PNEUMATIC-CUSHIONED SEAT-POST FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 664,184, dated December 18, 1900.

Application filed August 24, 1898. Renewed July 23, 1900. Serial No. 24,595. (No model.)

To all whom it may concern:

Be it known that I, JACOB WILLIAM STOLL, a citizen of the United States of America, and a resident of Chicago, county of Cook, State of Illinois, have invented certain new and useful Improvements in Pneumatic-Cushioned Seat-Posts for Bicycles, of which the following is a specification.

The object of this invention is to provide a pneumatic-cushioned seat-post that shall work without grinding or material friction, that shall be readily convertible into a non-cushioned structure, and that shall have no parts requiring accurate fitting or likely to get out of repair, as pneumatic piston devices are likely to do.

In the drawings, Figure 1 is an axial section of a seat-post tube and certain accessories. Fig. 2 is an analogous section looking in the direction of the arrow of Fig. 1. Figs. 3 and 4 are sections on the lines 3 3 and 4 4, respectively, of Fig. 2. Fig. 5 is a section similar to Fig. 2, but showing the parts in different positions. Fig. 6 is a section at 6 6, Fig. 5. Fig. 7 is a section analogous to Fig. 4, but showing a modified construction.

The upper portion A of a slotted tubular seat-post forming part of a bicycle-frame is made larger than is usual, and within the lower part of this portion is seated a pneumatic cushion C, the walls of which are similar in character to the wall of ordinary pneumatic tires. Its upper end is preferably flat, as shown at C′, and it is provided below with a common valve-stem C^3, that projects through the base of the enlarged portion.

Within the frame-post A is a tube B, slotted at its upper end, as seen at B^2, and provided with longitudinal ribs B′, grooved to receive bearing-balls F. Within this tube or seat-post is a second tube or post D, provided with external longitudinal ribs D′, registering with the ribs first mentioned, and each having near its upper and lower ends distinct short races alining with each other and allowing each of the balls F to roll freely along the inner tube as the latter descends. This inner tube supports the saddle, (not shown,) the manner of attachment being here immaterial. At the top of the frame-post is an ordinary clamp G, and within the frame-post at this point is a divided washer E, which normally receives at E′, between the adjacent ends, a lug A^2, projecting inwardly from the wall of the frame-post. The washer normally rests upon the top of the tube B, and both it and the tube B are rigidly clamped by the action of the clamp G, which also causes the lug A^2 to be gripped by the washer. At one side of the slot in the frame-post a lug A′ normally projects into a slot B^2 in the tube B and normally prevents compression of the latter. The seat-post D is provided with a lateral projection, which may be the upper end of the rib D′ and which in certain positions of the washer passes freely through an aperture E^2, formed by cutting away the inner portions of the washer's ends.

Normally, as shown in Figs. 1, 2, 3, and 4, the seat-post D, which has its lower end closed and preferably rounded, rests upon the cushion C and slides freely, guided by the balls at its upper and lower ends.

Should the rider so desire for any reason, the clamp G being loosened, the washer may be raised and turned to the position shown in Fig. 6, the tubes B D being pushed downward and the projection D′ being beneath the washer when the latter is again depressed. In the new position of the washer the lug A^2 engages in a notch E^3 in the edge of the washer, and the projection A′ lies in a wider upper portion of the slot B^2, near the upper end of the tube B, where it offers no resistance to the compression of that tube. The clamp G may now compress not only the frame-post, but both the tube B and the washer, and thus the latter is caused to rigidly grip the inner tube or seat-post. The action of the clamp, then, now binds the frame-post and both tubes into one rigid whole.

Should it be desired to allow the saddle to have a limited rotary movement about the axis of the frame-post, the grooves B^3 in the ribs B′ are made wide enough to permit such movement.

It is obvious that in certain parts of the devices where two parts are to be engaged the projection may be upon either if the other be provided with the corresponding recess to receive it.

What I claim is—

1. The combination with a compressible frame-post, of a longitudinally-adjustable

tube fitting in the same and provided with a longitudinal slot varying in width, a lug projecting from the frame-tube into said slot and adapted when in its narrow portion to prevent compression of the tube, and a clamp for compressing the frame-post; whereby the tube yields or not when clamped, according as its position brings the lug in the wider or narrower portion of the slot.

2. The combination with the slotted frame-post and means for compressing it to clamp the parts within, of a cushion seated in the frame-post at some distance below its upper end, a slotted tube fitting in the frame-post above the cushion and below the frame-post's upper end, a seat-post normally supported by said cushion and sliding in said tube, a compressible washer fitting in the frame-post above said tube and closely encircling the seat-post, and means for at will permitting or preventing the compression of the washer by the compressing of the frame-post.

3. The combination with the slotted frame-post and the clamp for compressing the same, of the slotted tube fixed in the frame-post by the action of said clamp and provided with an internal lug, a seat-post mounted to slide longitudinally in said tube, a cushion normally supporting the seat-post, and a divided washer above the tube, fitting the space between the seat-post and frame-post walls, and adjustable to include or not include said lug between its ends; whereby the action of the clamp leaves the seat-post free or rigidly locks it, the washer, and the tube together, according as the lug is between or not between said ends.

Signed by me at Chicago, Illinois, this 20th day of August, 1898.

JACOB WILLIAM STOLL.

Witnesses:
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W. E. WILLIAMS.