No. 612,389. Patented Oct. 18, 1898.

S. ALLEN.

VELOCIPEDE.

(Application filed Nov. 16, 1897.)

(No Model.) 2 Sheets—Sheet 1.

Fig: 1.

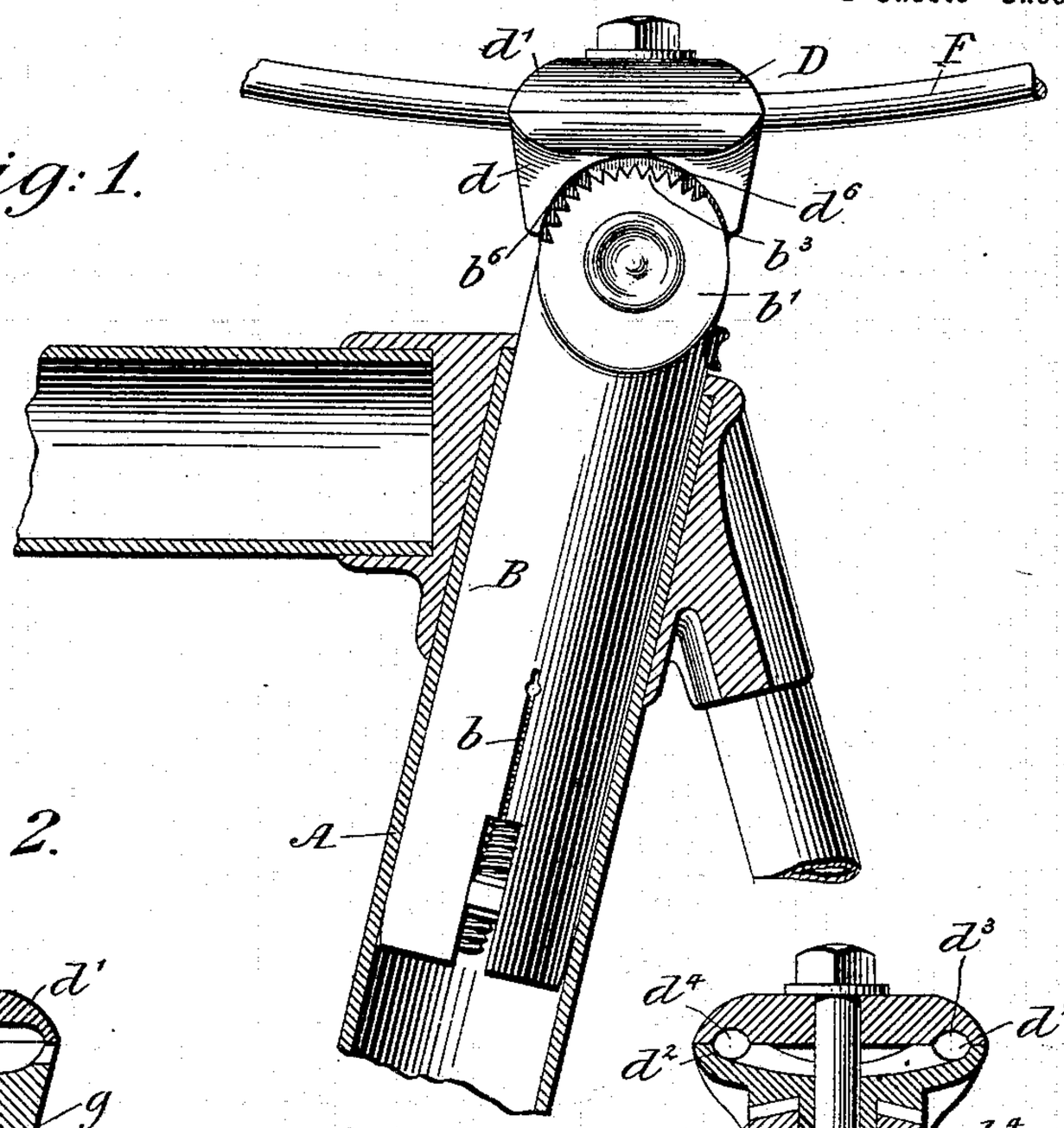


Fig: 2.

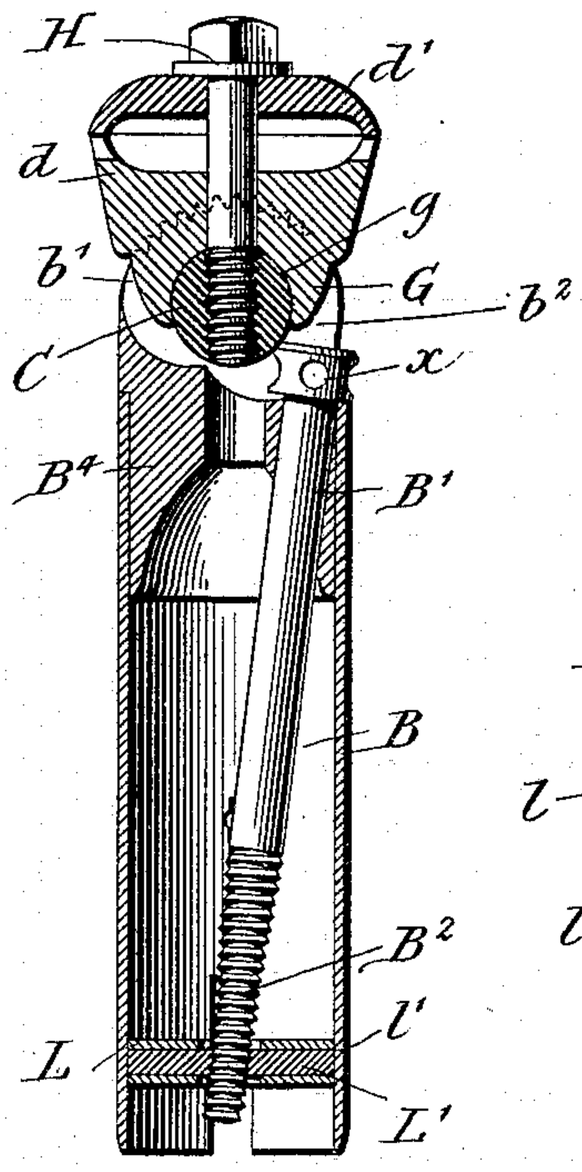


Fig: 3.

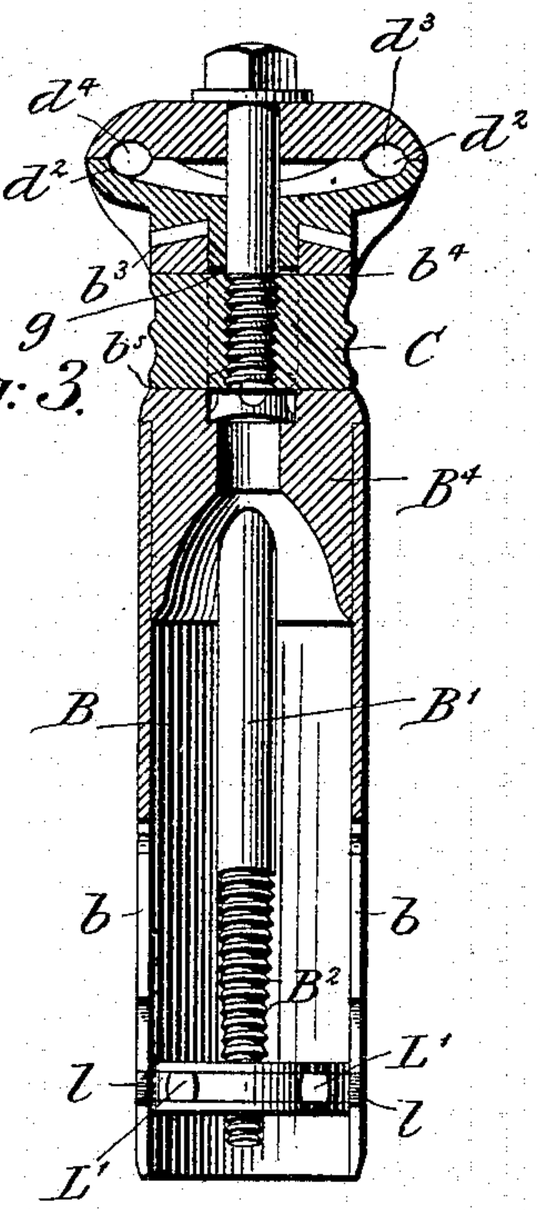
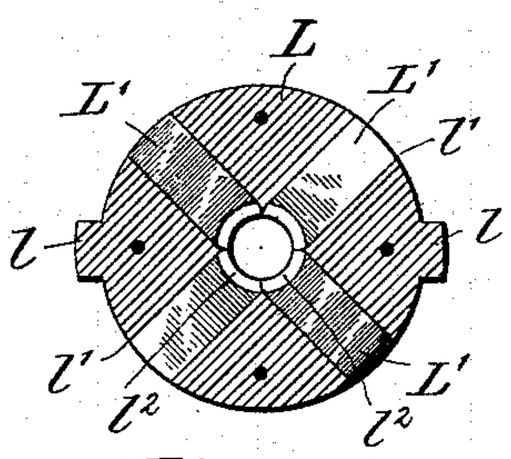


Fig: 4.



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(No Model.) 2 Sheets—Sheet 2.

Fig: 5.

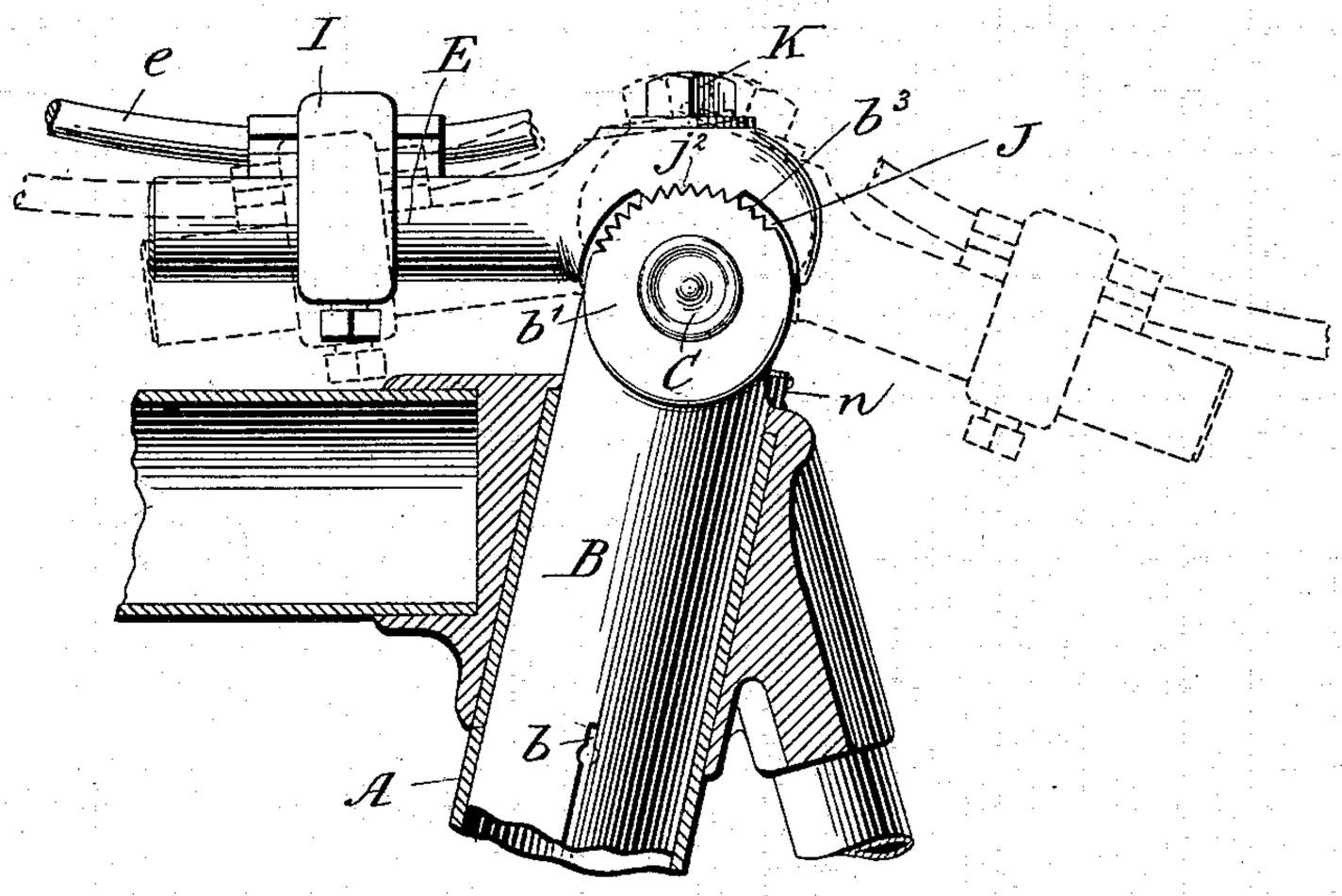


Fig: 7.

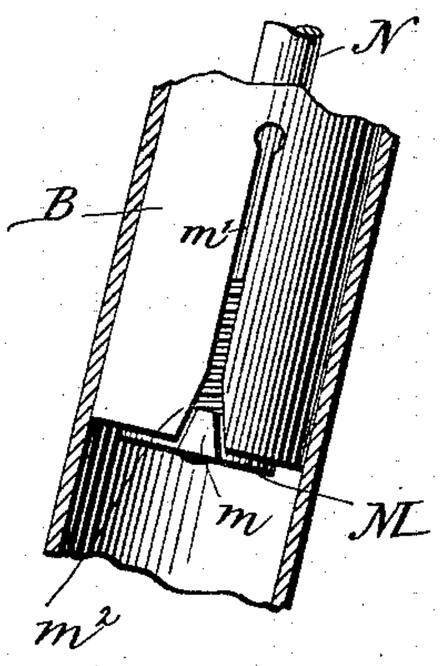


Fig: 6.

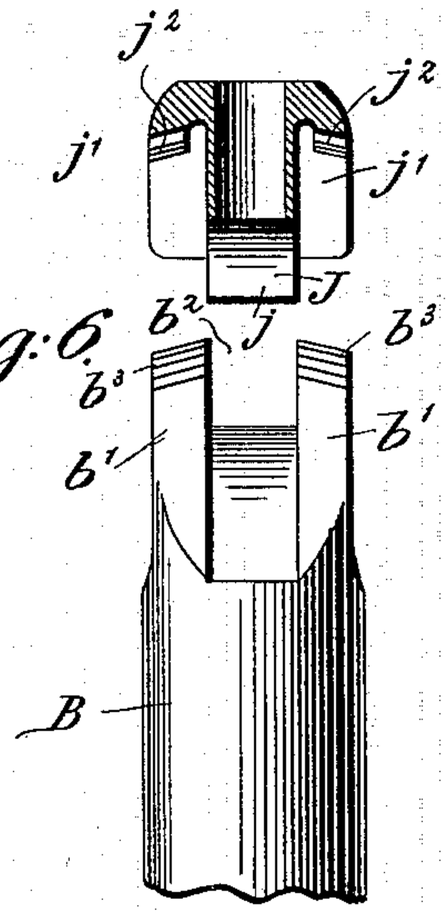
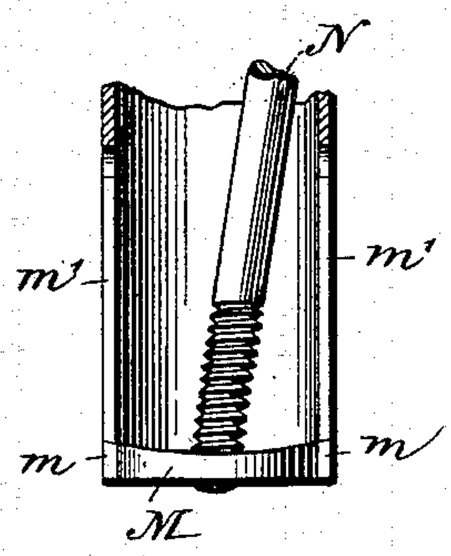


Fig: 8.



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UNITED STATES PATENT OFFICE.

SAMUEL ALLEN, OF DANSVILLE, NEW YORK.

VELOCIPEDE.

SPECIFICATION forming part of Letters Patent No. 612,389, dated October 18, 1898.

Application filed November 16, 1897. Serial No. 658,680. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL ALLEN, a citizen of the United States, residing at Dansville, in the county of Livingston and State of New York, have invented certain new and useful Improvements in Velocipedes, of which the following is a specification.

The object of my invention is to provide improved means for supporting a velocipede-saddle.

It is desirable that a velocipede-saddle should be adjustable both longitudinally in a horizontal plane to vary the position of the rider relatively to the handle-bars and to the pedals and also vertically relatively thereto. It is also desirable that the saddle should be inclined more or less at varying angles to suit the comfort of the rider and to adjust his position on the velocipede to facilitate the propulsion and steering thereof. According to my invention I employ a tubular split saddle-post adapted to be inserted into a hollow seat-standard, and within the saddle-post I place a vertically-movable disk carrying expanding arms adapted to spread the split end of the saddle-post. The expanding arms are operated by a bolt having a tapered screw-threaded end, and this bolt extends vertically through the post, and its headed end is arranged at the top thereof within convenient reach for adjustment. By this means the saddle-post may be readily adjusted vertically and securely held in the desired position. The saddle is either attached to a horizontally-arranged supporting-bar or to a clamp, either of which is provided with segmental rows of teeth adapted to engage with corresponding segments on the upper ends of lugs projecting from the top of the saddle-post. Between the segmental teeth on the clamp or bar is arranged a recessed lug that extends between the ears on the top of the saddle-post and over a cylindrical pivot-block that is adapted to turn in bearings in the lugs. A screw-bolt extends through the clamp or the bar and into the cylindrical pivot-block. When the bolt is loose, the clamp or the bar may be tilted fore and aft to adjust the inclination of the saddle. When the bolt is tightened, the teeth on the bar or clamp are made to engage securely with the teeth on the ears, and the saddle is held firmly in its adjusted position. The teeth on both the ears and the clamp or bar are beveled or inclined in such manner as to prevent the ears from spreading, and the lug between the ears also prevents the ears from being compressed or bent inwardly.

It is not essential that the devices for adjusting the saddle vertically should be used in connection with the devices for adjusting the saddle horizontally and for tilting it. I may use the latter devices without employing means for vertically adjusting the saddle, or I may employ them with other means than those above referred to for giving to the saddle a vertical adjustment. In like manner the improved devices which I employ for adjusting the saddle vertically may be used either with or without devices for adjusting the saddle horizontally or inclining it, or they may be used with other devices for this purpose which may differ from those herein referred to.

In the accompanying drawings, Figure 1 shows in section a portion of the frame of a bicycle with my improvements applied. Fig. 2 is a detail view in section of my improved devices for adjusting the saddle-post vertically and for tilting the saddle. Fig. 3 is a vertical central section through these devices, taken at right angles to the section illustrated in Fig. 2. Fig. 4 is a detail plan view of the expanding blocks and the disk in which they are mounted. Fig. 5 is a view similar to Fig. 1, showing another form of my invention for adjusting the saddle horizontally and for tilting it. Fig. 6 is a detail view in section of some of the devices for tilting the saddle. Fig. 7 is a detail view in section of a modified way of adjusting the saddle vertically. Fig. 8 is another detail view of the devices shown in Fig. 7.

The saddle-standard A is hollow, and the saddle-post B is arranged to slide vertically therein. It is also hollow and is formed with two slots *b b* at its lower end. These slots are narrow at their upper ends and wide at their lower ends, as indicated in Fig. 1. The upper end of the post B is closed by a plug B^4. The plug is securely fastened in any suitable way to the post, and it is provided with two parallel upwardly-projecting ears *b'*, having an opening b^2 between them, and they are formed on their upper ends with

arcs of teeth b^3. The lugs have openings or apertures b^4 b^5 in line with each other, and through these openings extends a cylindrical pivot-block C, which is adapted to turn in said openings.

The saddle may be attached to a clamp D, as shown in Fig. 1, or to a horizontal supporting-bar E, as shown in Fig. 5. The clamp D consists of two members d d'. The lower member d is formed with parallel grooves d^2 to receive the rods F, which support the seat. These rods are adapted to slide back and forth in the grooves for purposes of adjustment. The upper member d' of the clamp is also formed with grooves d^3 d^4 to accommodate the rods F. This form of clamp has already been extensively used and was not invented by me. The lower clamp member, however, is provided with a lug G, that extends between the ears b', and while adapted to move between them fits snugly therein, so as to prevent the ears from bending inwardly, should they tend to do so. The lug G is recessed at g and fits over the cylindrical block C, as indicated in Fig. 2. A bolt H extends through both clamp members and through the lug into a screw-threaded aperture in the cylindrical block C. When the bolt is screwed home, as indicated in Fig. 2, the two clamp members are securely united to the block C and are adapted to turn therewith; but when thus screwed home the teeth d^6 on the lower clamp member engage with the teeth b^3 on the ears b', and the clamp is prevented from turning on its support. When, however, the screw-bolt is loosened, the clamp may be lifted from the teeth b^3, and then the clamp may be tilted fore and aft to adjust the inclination of the saddle. The lower side of the lower clamp member is formed with curved recesses b^6, in which the teeth are arranged, and the curved ears extend into these recesses.

In Figs. 5 and 6 another form of my invention is shown. Instead of employing a clamp I employ a saddle-supporting bar E. The rods e, which support the seat, may be attached to the bar in the manner indicated by a clamp I, and this clamp may be loosened and tightened to adjust the saddle on the supporting-bar. One end of the bar is enlarged, and it is formed with a lug J, adapted to enter the opening b^2 between the ears b'. This lug is recessed at j and extends over a pivot-block C. Recesses j' are formed on opposite sides of the lug, and teeth j^2 are formed on the upper sides of these recesses, which are adapted to engage with the teeth on the upper ends of the lugs b'. A bolt K, similar to the bolt H, is employed for securing the bar E to the pivot-block C.

The operation is substantially the same as that before described—that is to say, when the bolt is screwed home the supporting-bar E is attached to the block C. The bolt also causes the teeth j^2 to engage with the teeth b^3 and the bar is prevented from turning. When, however, the bolt is loosened, the bar may be raised a short distance, causing the teeth j^2 to disengage from the teeth j^3, and the bar may be tilted, the block C turning in its bearings when the bar is thus adjusted.

As indicated in Fig. 5 by dotted lines, the bar may be reversed in position—that is, instead of extending forwardly from the saddle-post it may extend rearwardly therefrom—and the same adjustments as those before described may be effected.

The segmental rows of teeth on the upper ends of the lugs are beveled or inclined, as indicated in Figs. 3 and 6, and the corresponding teeth on the clamp and on the saddle-supporting bar are correspondingly beveled or inclined. This effects a more secure connection and any tendency of the lugs to spread outwardly is prevented.

A disk L is arranged at the lower end of the saddle-post. (Shown in Figs. 1 to 4, inclusive.) It fits snugly the lower end of the post and is provided with lugs l, that extend into the lower widened ends of the slots b and are guided vertically therein. The disk is provided with radial channels l', within which are arranged sliding blocks L', the outer ends of which are adapted to bear against the interior of the saddle-post and the inner ends of which are screw-threaded at l^2 and are adapted to engage with the tapered screw-threaded end B^2 of the screw-bolt B'. The bolt, it will be observed, is inclined and the screw-threads on the sliding blocks L' are correspondingly formed. The arrangement is such that by turning the screw-bolt in the proper direction the disk may be raised or lowered in the saddle-post and at the same time the blocks L' caused to expand or contract. When the screw-bolt is operated to expand the tubular post, it will of course tend to expand the post to a greater extent at the lower end thereof than at the upper end, the blocks L' pressing this end outwardly; but as the blocks are thus expanded the disk is elevated and acts upon the post at a higher elevation and will expand this portion of the post and cause it to engage the interior of the hollow standard. In this way a very firm clamping action is effected and the saddle is prevented from slipping downwardly after it is once adjusted.

The bolt B' may be formed with any suitable head to permit a ready adjustment. As shown, it is formed with apertures x to receive a suitable tool that will turn the bolt in well-known ways. The head of the bolt is exposed to the outside of the support. It is not necessary to take off the clamp or the saddle-supporting bar to effect an adjustment of the saddle-post relatively to the saddle-standard, inasmuch as the bolt-head is arranged in a recess below the clamp or the saddle-supporting bar.

A modification is shown in Figs. 7 and 8. In this instance instead of providing a disk with expanding blocks I use a disk M, having

wedge-shaped lugs m, that are guided vertically in the slots m'. These slots are wedge-shaped at their lower ends m^2, and the lugs extend into the wedge-shaped portions of the slots, as indicated in Fig. 7. A screw-bolt N extends through a screw-threaded portion of the disk M, and when this bolt is turned in the proper direction it elevates or lowers the disk. This screw-bolt is preferably inclined in the same manner as that shown in Fig. 2. The head of the bolt (indicated at n in Fig. 5) being arranged beneath the clamp, it is readily accessible. When the screw is turned in the proper direction, the disk is elevated and the lugs act upon the inclined portions of the slots and expand the tubular saddle-post. While this form of adjustment is efficient, I prefer that shown in the first sheet of the accompanying drawings.

I claim as my invention—

1. The combination of a saddle-post provided with two parallel upwardly-projecting ears formed with teeth on their upper ends, a seat-support having an integral lug projecting downwardly from it into the space between the ears and formed with teeth on opposite sides of the lug engaging the teeth on the ears, a cylindrical pivot-block extending through openings in the ears, and adapted to turn therein without moving endwise, and a screw-bolt extending through the seat-support and screwing into the cylindrical pivot-block.

2. The combination of a saddle-post formed with parallel upwardly-projecting toothed ears on its upper end, a seat-support formed with an integral lug extending downwardly between the ears and with teeth adapted to engage the teeth on the upper ends of the ears, a pivot-block, arranged to turn in bearings in the lugs, and a bolt for attaching the seat-support to the pivot-block which is provided with a screw-thread on its inner end engaging a screw-threaded socket in the pivot-block.

3. The combination of the saddle-post formed with parallel upwardly-projecting ears on its upper end, having segments of beveled or inclined teeth, a seat-support formed integrally with a downwardly-projecting lug arranged between the ears and formed with arcs of beveled or inclined teeth engaging the teeth on the ears, a pivot-block, arranged in bearings in the ears and a bolt screwing into the pivot-block and attaching the seat-support thereto.

4. The combination of a tubular saddle-standard, a tubular slotted saddle-post arranged to slide vertically therein, a plug, B^4, closing the upper end of the saddle-post and provided with two parallel upwardly-projecting ears formed with teeth on their upper ends, a seat-support having an integral lug projecting downwardly from it into the space between the ears and formed with teeth on opposite sides of the lug, engaging with teeth on the ears, a cylindrical pivot-block extending through openings in the ears and adapted to turn therein without moving endwise, a screw-bolt extending through the seat-support and screwing into the cylindrical pivot-block, a screw-bolt arranged at an inclination within the saddle-post extending through the plug, B^4, and having its head projecting from the top thereof between the parallel lugs, and devices for expanding the slotted end of the post arranged at the lower end thereof and connected with the screw-bolt.

5. The combination of the tubular saddle-standard, the tubular slotted saddle-post adapted to slide vertically therein, the disk arranged at the slotted end of the post, the radially-arranged sliding blocks carried by the disk, and means for expanding said sliding blocks.

6. The combination of the tubular saddle-standard, the tubular slotted saddle-post, the disk arranged at the slotted end thereof, the radially-arranged sliding blocks carried by the disk, and the tapered screw for expanding the sliding blocks.

7. The combination of the tubular saddle-standard, the tubular slotted saddle-post adapted to slide therein, the disk arranged within the saddle-post and having lugs extending into and guided by the slots on the post, the radially-arranged sliding arms carried by the disk, and the tapered screw for expanding said arms.

In testimony whereof I have hereunto subscribed my name.

SAMUEL ALLEN.

Witnesses:
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JAMES A. BAILEY.