

(No Model.)

F. D. OWEN.

REAR WHEEL ADJUSTMENT FOR BICYCLES.

No. 535,261.

Patented Mar. 5, 1895.

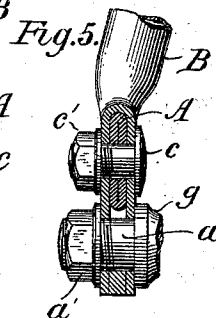
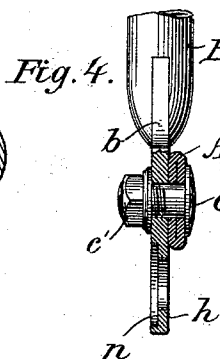
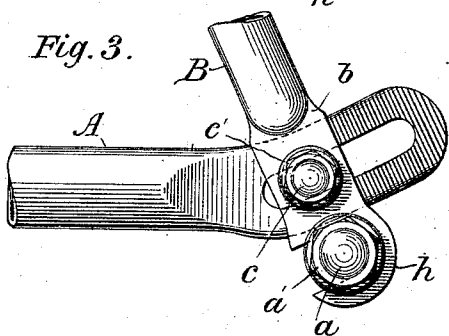
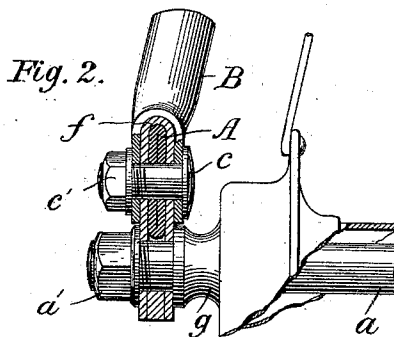
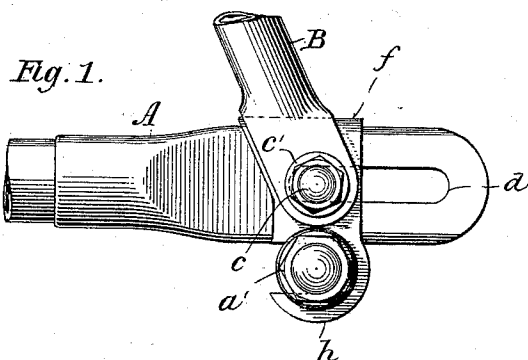


Fig. 6.

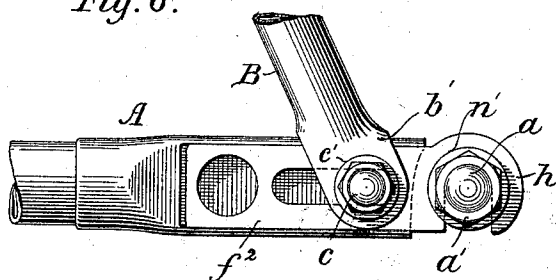


Fig. 7.

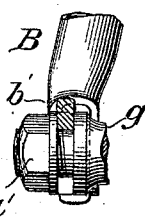


Fig. 8.

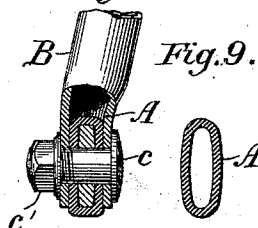


Fig. 9.

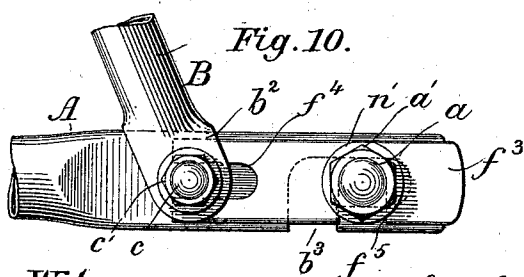
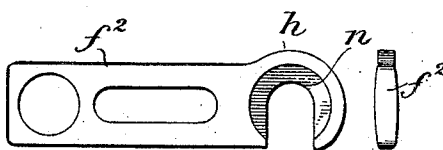


Fig. 11.



Witnesses;

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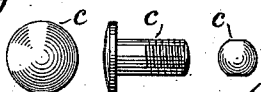


Fig. 12.

Inventor;

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UNITED STATES PATENT OFFICE.

FREDERICK D. OWEN, OF WASHINGTON, DISTRICT OF COLUMBIA.

REAR-WHEEL ADJUSTMENT FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 535,261, dated March 5, 1895.

Application filed June 12, 1894. Serial No. 514,321. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK D. OWEN, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Rear-Wheel Adjustments for Bicycles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in rear wheel adjustments for bicycles, and is designed to furnish means for readily removing the rear wheel at will without the necessity of first disassembling the driving chain, and without the employment of any additional device for locking the adjustment than the customary bolt employed for connecting the ends of the side and rear bars of the frame.

In the accompanying drawings, Figure 1 represents, in full lines, a side elevation of the parts embodying one form of my invention. Fig. 2 represents an end elevation thereof, partly in section. Figs. 3 and 4 represent respectively a side elevation and sectional end elevation of a further modification. Fig. 5 represents a sectional end elevation of a third modification. Figs. 6 and 7 represent respectively a side elevation and a sectional end elevation of a fourth modification. Fig. 8 represents a sectional end elevation of a fifth modification. Fig. 9 represents in cross section the flattened end portion of the side brace. Fig. 10 represents a side elevation of a sixth modification. Fig. 11 represents in side and end elevation the sliding member of the adjustment shown in Figs. 6 and 7; and Fig. 12 represents front, side, and rear elevations of the locking bolt for the sliding member.

Similar letters of reference indicate similar parts throughout the several views.

Referring to the drawings, A indicates one of the side braces of the bicycle frame, and B the co-operating rear brace. The side braces, preferably of metal tubing, are flattened at their ends, as shown, and may be formed thereat either integrally with the remainder of the bar, as in Figs. 3 and 10, or by brazing on an additional short section of tubing of somewhat larger diameter, as in Figs. 1 and

6, especially where it is desirable to have a broader bearing for the sliding member of the adjustment, or where it is convenient to use scrap ends of tubing otherwise unemployable. The rear braces are preferably formed at the end, (as, for instance, in Figs. 1, 5 and 8) by slotting and flattening the tubes thereat in such manner as to span the flattened ends of the side braces, or, in some instances, by a single prolongation *b*, *b'* or *b''* (as, for instance, in Figs. 3, 6 and 10).

In all of the modifications, it will be noted that the ends of the side and rear braces are connected by a locking bolt *c*, which may be of the kind shown in Fig. 12, and it is a characteristic feature of the invention that this locking bolt is the means for securing the rear wheel in the adjustment chosen. Thus, in Figs. 1 and 2, the bolt *c* passing through the bifurcated end of the rear brace B, and through a slot *d* in the flattened end of the side brace A, passes also through a U-shaped slide *f*, movable along said flattened end, when the nut *c'* of the bolt is loosened. The lower end of the slide is formed in the shape of hook or yoke *h* for the reception of the end of the rear wheel axle *a*, having the customary cone *g*, and the locking nut *a'*. By inserting the end of the axle within the yoke *h* and tightening the nut *a'* the rear wheel may be adjusted so as to take up the chain slack by moving the slide correspondingly and finally tightening the nut *c'*.

When it is desired to remove the wheel, this may be done by loosening the nut *a'* whereupon the wheel may be taken out through the open end of the yoke, without disturbing the relative adjustment of the remaining parts; whereby, after making such repairs as may be necessary upon the wheel, it can be replaced in exactly its original and appropriate adjustment. This latter feature is also characteristic of my invention, and is of special value in case of injury to the rear wheel on the road, when either from lack of experience on the part of the rider it would be difficult for him to re-establish the original adjustment, or where such re-adjustment would consume valuable time.

In Figs. 2 and 4, the slotted end of the side brace is inclined, in such manner that the adjustment can take place in a substantially cir-

cular path, of a radius equal to the length of the rear brace, thereby giving a longer range of adjustment. It will also be noted, that in this instance the slide itself as an independent or separate element is itself omitted, and the flattened projection *b* from the rear brace serves as the slide and permits the parts to be locked as before. The locking action may be facilitated by providing corrugated or roughened contact surfaces as indicated in Fig. 3. So, also, in Fig. 5, the separate slide is dispensed with, the construction being otherwise identical with Figs. 1 and 2.

In Figs. 6 and 7, the slide f^2 is slotted and is guided within a suitable depression in the side of the flattened side brace, or, if desired it may enter the interior of the side brace as shown in Fig. 8, said interior being in such case made of the oval cross section shown separately in Fig. 9, and affording thereby a longer bearing to the locking bolt. These constructions have the advantage that the adjustment of the wheel does not in any manner affect the point of connection of the side and rear braces, while still the same connecting bolt is used as the locking device of the adjustment.

By reference to Fig. 11 it will be noted that the yoke end of the slide f^2 is recessed at *n* for the reception of the washer *n'* which is thereby held the more securely in place. It will furthermore be observed that the sides of the slide are made convex to correspond to a corresponding cavity of the side brace,—a construction that I recommend to secure an increased and more efficient frictional contact.

In the construction shown in Fig. 10 the slide f^3 is slotted at f^4 to permit of adjustment from or toward the locking nut *c*, and is slotted at f^5 to admit the rear wheel axle. The slot f^5 is adapted to register with the vertical portion of a slot b^3 formed in the side brace and which is continued horizontally as indicated in dotted lines, so as to lock the wheel in its adjustment when the parts are in the position shown in Fig. 10, but permitting its release when in the opposite position, as will be readily understood. This construction,

while realizing the advantage of maintaining a constant relationship of the side and rear braces, as in Fig. 6, requires the slide to be loosened and moved when the wheel is to be removed; whereby the proper adjustment of the slide has to be re-established,—a disadvantage not present in the other constructions, although partly compensated by the almost absolute security afforded against any possible accidental escape of the rear axle from its bearings.

Having thus described my invention, what I claim is—

1. A rear wheel adjustment for bicycles, comprising a sliding member within which the wheel axle is mounted, and a locking device therefor, said locking device serving also as the sole means for connecting the side and rear braces of the bicycle frame, and said sliding member being separate from and independently movable with respect to the side and rear braces; substantially as described.

2. A rear wheel adjustment for bicycles, comprising an adjustable member within which the wheel axle is mounted, said adjustable member being guided by the lower rear fork of the frame, and a locking device therefor, said locking device being the sole means for uniting the side and rear braces and consisting of a bolt passing through said side and rear braces and a clamping nut therefor, and the wheel axle being removable from the adjustable member without disturbing the adjustment of the chain or that of the bearing; substantially as described.

3. A rear wheel adjustment for bicycles, made up of a side brace, a rear brace engaging at its lower end said side brace, a member sliding with respect to the point of junction of the side and rear braces, and a locking bolt connecting the ends of the side and rear braces, and also passing through the sliding member; substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERICK D. OWEN.

Witnesses:

FRANK D. BLACKISTONE,
CHRISTOPHER YOUNG.