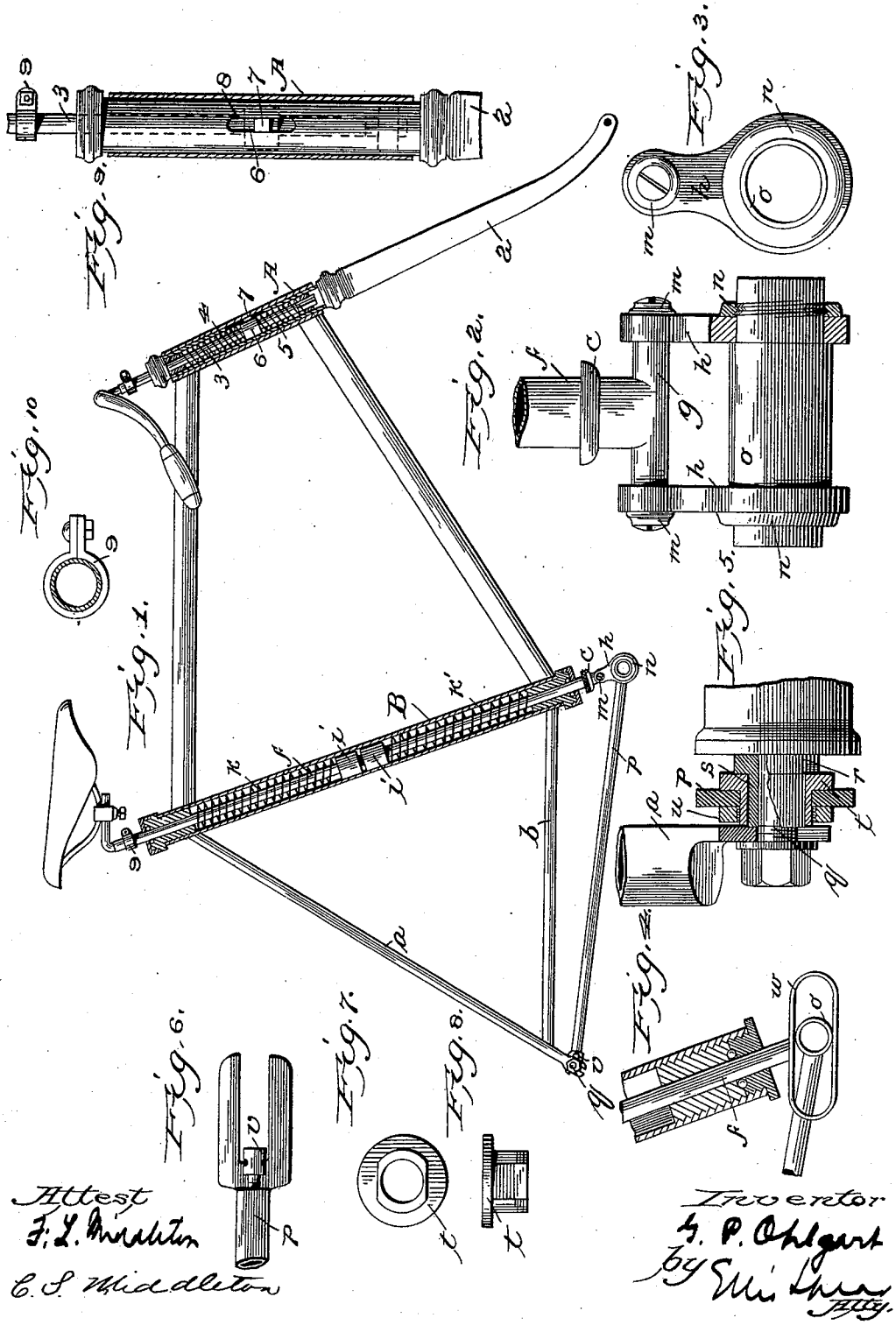
(No Model.)

G. P. OHLGART.

BICYCLE.

No. 602,354. Patented Apr. 12, 1898.



Attest
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UNITED STATES PATENT OFFICE.

GEORGE PHILIP OHLGART, OF BALTIMORE, MARYLAND.

BICYCLE.

SPECIFICATION forming part of Letters Patent No. 602,354, dated April 12, 1898.

Application filed July 17, 1897. Serial No. 644,959. (No model.)

To all whom it may concern:

Be it known that I, GEORGE PHILIP OHLGART, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Bicycles, of which the following is a specification, reference being had therein to the accompanying drawings.

My present invention is an improvement upon and a further development of the subject-matter of an application filed by me on the 8th day of June, 1896, Serial No. 594,719, relating to bicycles. I have aimed to improve the connection between the seat-supporting rod and the reaches, so as to secure freedom of movement at this point and at the same time furnish ample support for the crank-box, and, further, to make a better connection or bearing between the reaches and the rear axle, so as to reduce the friction and the amount of wear. Other improvements relate to details more particularly referred to hereinafter.

In the drawings, Figure 1 is a side elevation of a frame, with the front and central standards in section. Figs. 2 and 3 are details of the connection between the seat-supporting rod and the crank-hanger. Fig. 4 is a modification of this connection. Figs. 5, 6, 7, and 8 are details of the rear connection between the reaches and rear axle. Fig. 9 is a view of the front standard and its inner sleeve. Fig. 10 is a detail.

The frame of the machine is of substantially ordinary construction, except that the rear bars *a b* are rigidly secured together and the adjustment of the chain is secured by supplemental reaches extending between the rear axle and the seat-supporting rod *f*, which, as in my former case, extends through the tubular standard B, the crank-box being carried by the forward end of the said reaches.

The springs *k k'* within the standard B, I prefer to independently adjust in tension by the collars *i i* instead of using a single collar, as in my aforesaid application. The tension of the springs is such as normally to sustain the weight of the rider and keep the seat in its highest position, the shoulder or flange *c* being kept pressed against the under face of the standard B.

The preferred form of connection between the rod *f* and the supplemental reaches I have shown in Figs. 2 and 3. The rod *f* terminates in a cross-head *g*, fitted to receive the eyes of links *h h*, having turning movement on the cross-head and held in place thereon by headed screws *m m*. The lower ends of the links are enlarged to fit over the reduced ends of the crank-box *o*, as in Fig. 2, being held in place by the threaded collars *n n*. This provides a double joint and gives ample freedom of movement at this point, preventing all binding of the parts and permitting the easy movement of the rod *f* up and down.

The reaches *p* extend rearwardly to the rear axle *q*, and the connection at this point I prefer to make as in Fig. 5. The axle *q* supports the cone *r*, which has a sleeve extension *s*, and upon this is fitted a flanged sleeve *t*, Figs. 7 and 8, the opposite sides being flattened to receive the bifurcated or flattened ends of the reaches *p*. The reaches are clamped to the sleeve by the threaded collars *u*, the round parts of the sleeve *t* being threaded to receive the collar. This construction provides a pivotal connection for the reach and saves the ends of the reach from wear. The rear inclined bars *a* of the frame have their flattened ends clamped to the axle against the end of the sleeve *s* of the cone.

The adjusting-screw *v* has a turning-head adapted to serve as a bearing-point against the frame to tighten or loosen the chain by moving the reach away from or toward the axle.

A modification of the connection of Figs. 2 and 3 is shown in Fig. 4, in which the crank-box is held in a loop *w*, connected to the end of the rod *f*.

The spring-supported handle-bar is also slightly changed as to its details, as shown in Fig. 9. The tubular front standard A receives the tubular shank of the fork 2, and within this shank a rod 3 is located, encircled by upper and lower springs 4 5, which support the bar through a collar 6. The handle is secured to this rod and a spring action is thus secured independent of the shank of the fork. In order that the rod may rotate with the shank of the fork, the collar 6 has a projection 7, engaging an elongated slot 8 in the shank, and this prevents independent rotary motion of the rod 3, but permits vertical movement against the pressure of the springs.

The rotation of the rod 3 is further prevented by the end being made square and fitting a square opening in the plugs.

Both the seat-supporting rod *f* and the handle-rod 3 may be prevented vertical movement when it is desired to prevent the spring action by a clamp 9, Fig. 10, placed around the upper end of the rods and bearing against the upper faces of the standards.

In order to lessen the friction, I provide antifriction-balls for the plugs around the rod *f*, as shown in Fig. 1 and the enlarged view, Fig. 4.

What I claim is—

1. In combination with a tubular standard, a seat-supporting rod extending through the same, a spring sustaining the rod, reaches carrying the crank-box having pivotal connection with the rear axle and a freely-movable connection between the reaches and the lower end of the seat-supporting rod, substantially as described.

2. In a bicycle or the like a tubular standard, a spring-supported rod for the seat extending through the said standard, reaches carrying the crank-box pivotally connected with the rear axle and a double-jointed turning connection between the reaches and the lower end of the rod directly in line therewith, substantially as described.

3. In combination in a bicycle, a spring-supported rod, reaches connected thereto having forked ends pivotally connected to the rear axle, said axle being adjustable longitudinally of the forked ends within the same, substantially as described.

4. In combination in a bicycle, the rear axle, the sleeves carried by said axle adapted to have free turning movement, the reaches connected to said rod having forked ends fitted on said sleeves, said sleeves being flattened to prevent them from turning within said forks, and means for clamping said forks rigidly to said sleeves, substantially as described.

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

GEORGE PHILIP OHLGART.

Witnesses:

A. H. ANDERSON,

PHILIP A. BOSS.