(No Model.)

R. E. HELMORE.

BICYCLE SEAT.

No. 568,977. Patented Oct. 6, 1896.

Fig. 1

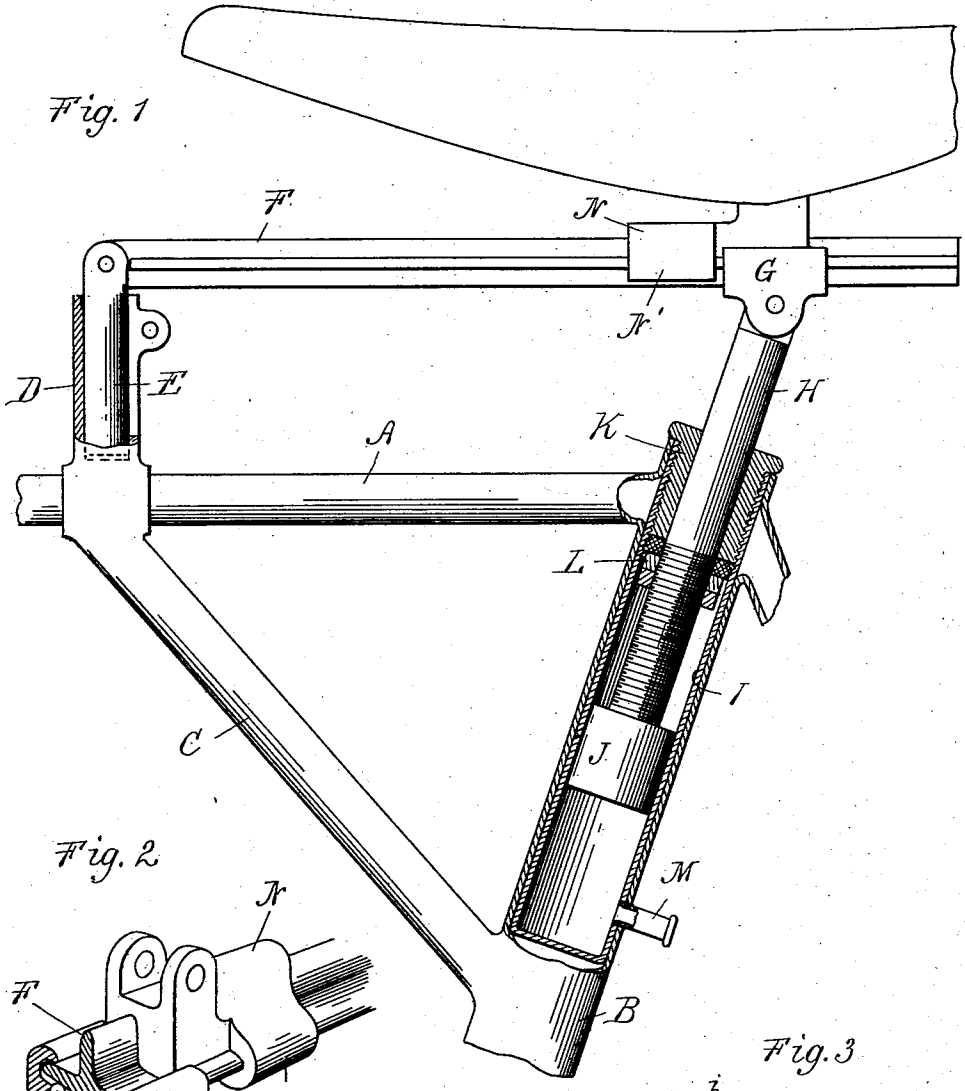


Fig. 2

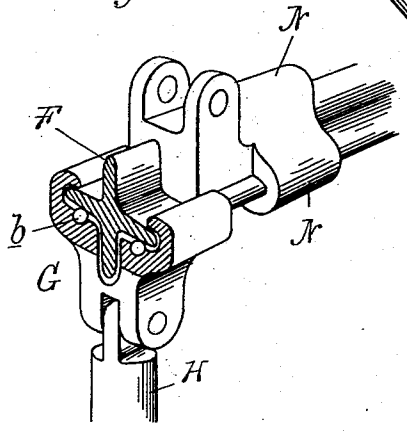
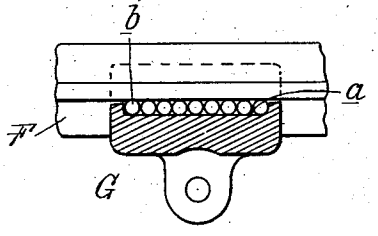


Fig. 3



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UNITED STATES PATENT OFFICE.

ROBERT E. HELMORE, OF WEST BAY CITY, MICHIGAN.

BICYCLE-SEAT.

SPECIFICATION forming part of Letters Patent No. 568,977, dated October 6, 1896.

Application filed August 24, 1895. Serial No. 560,380. (No model.)

To all whom it may concern:

Be it known that I, ROBERT E. HELMORE, a citizen of the United States, residing at West Bay City, in the county of Bay and State of Michigan, have invented certain new and useful Improvements in Bicycle-Seats, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to improvements in bicycle-seats in which an air-cushion is employed in lieu of metallic springs; and it has for its object to improve the construction of the seat-bar and to so secure the seat thereon that the rider, while on the "wheel," may adjust the seat forward or back, according to the position of his body, and be enabled in all positions to have a comfortable support.

With such objects in view the invention consists in the construction, arrangement, and combination of the various parts, all as more fully hereinafter described.

In the drawings, Figure 1 is a view of a portion of a bicycle-frame, showing the strut member partly in section. Fig. 2 is a sectional perspective illustrating the construction of the seat-bar and the connection between the bar and head-block of the connecting-rod. Fig. 3 is a longitudinal section through the head-block.

A is the backbone or compression member of a bicycle-frame. B is the strut member. These two tubes I preferably brace by the brace C, the upper end of the brace being extended above the tube A to form the socket D, preferably split, so that it may be clamped upon the pin E.

In the upper end of pin E is pivoted the forward end of the seat-bar F, which is preferably cruciform in cross-section, as shown in Fig. 2.

G is a block having suitable guide-grooves to engage upon the bar F. In its upper surface it is provided with sockets or grooves *a*, in which are balls *b*, which rest against the under side of the horizontal flanges or ribs of the seat-bar. To this block is pivoted the rod H, which enters a cylinder I, preferably secured in the upper end of the tube B, and at its lower end provided with a piston J, fitting in the cylinder.

K is a nut or gland in the top of the cylinder through which the rod passes.

L are adjustable nuts on the rod H, and which act as stops to limit the outward or upward movement of the piston.

M is a valved nipple to which a pump may be attached for pumping air into the cylinder beneath the piston.

N is a grooved block, sliding on the seat-bar, having guide-flanges N′ embracing the horizontal ribs thereof, and to which the saddle, of any desired construction, is secured.

The parts being thus constructed, they are intended to be used as follows: The rider pumps up the air-pressure in the cylinder I beneath the piston J to give a spring which will be satisfactory according to his weight, the piston being held from upward movement by the stops or nuts L. When the desired pressure is obtained, the rider mounts the saddle in the usual way and the air-cushion beneath the piston forms a resilient support for the saddle, which latter may be of any desired construction. The rider while in transit may by moving his body horizontally adjust his saddle forward and back to any desired point on the seat-bar F, between the pin E and block G, which serve as means for preventing the accidental displacement of the seat-block from the seat-bar. In the ordinary use of the bicycle, however, the strain on the seat is at such an angle to the seat-bar that the block N will not slide in its ordinary use.

The height of the seat and the size of the air-cushion may be adjusted by adjusting the pin E vertically and by adjusting the nuts L.

Such a construction gives the most satisfactory results for long-distance riding, as the operator is enabled to change his position and at the same time change the relation of the seat, so as to obtain a comfortable seat at all times.

What I claim as my invention is—

1. In a bicycle, the combination with the frame, of a seat-bar hinged thereto at one end, a cylinder on the frame beneath the free end of the bar, a freely-movable piston-rod slidingly connected to the seat-bar at its upper end, and a piston on its lower end engaging in the cylinder, substantially as described.

2. In a bicycle, the combination with the frame, of a seat-bar hinged thereto at one end, a cylinder secured in the strut member

of the frame, a piston therein, a piston-rod projecting therethrough, a block hinged to the upper end of the rod, with which the seat-bar has a sliding engagement, and a seat on the seat-bar, substantially as described.

3. In a bicycle, the combination with the frame, of the socket D thereon, the pin E adjustably secured in the socket, the seat-bar F hinged to the pin, a seat slidingly supported on the seat-bar, a cylinder beneath the free end of the seat-bar, a piston therein and a connecting-rod between the piston and the seat-bar having a movable connection with the latter, for the purpose described.

4. In a bicycle, the combination with the frame of a strut member having a cylinder in the upper end thereof, a pump connection into said cylinder, a piston in the cylinder, a hinged seat-bar, a connecting-rod on the piston, a block G pivoted to the upper end of the connecting-rod and a ball-bearing between the block G and the seat-bar, substantially as described.

5. In a bicycle, the combination of a bicycle-frame, a horizontal yieldable seat-bar thereon, a seat-block guided and sliding on the seat-bar, a seat on said block and means for preventing the accidental displacement of said block, substantially as described.

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

ROBERT E. HELMORE.

Witnesses:
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