No. 642,269

Patented Jan. 30, 1900.

S. G. SMITH.

BICYCLE.

(Application filed Mar. 3, 1899.)

(No Model.)

Fig. 1.

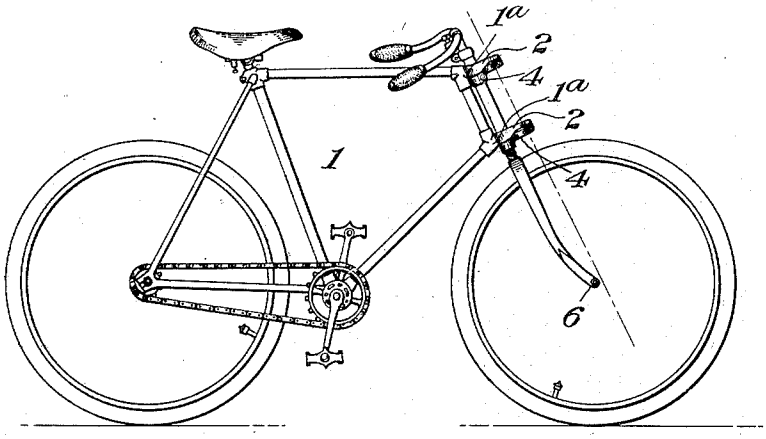


Fig. 2.

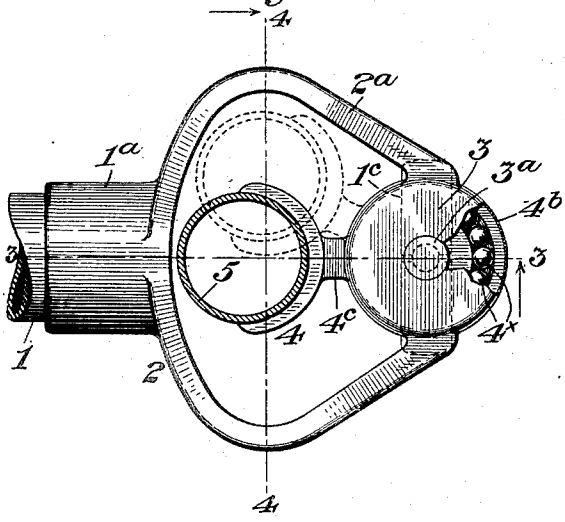


Fig. 3.

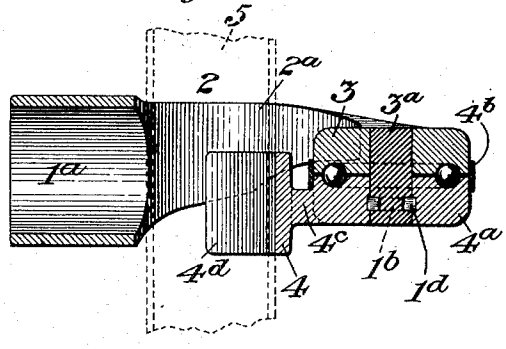
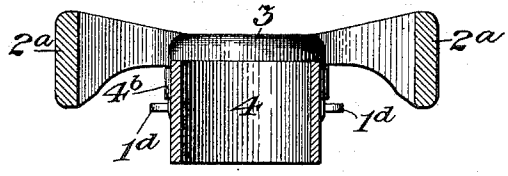


Fig. 4.



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UNITED STATES PATENT OFFICE.

STEPHEN G. SMITH, OF HANNIBAL, MISSOURI.

BICYCLE.

SPECIFICATION forming part of Letters Patent No. 642,269, dated January 30, 1900.

Application filed March 3, 1899. Serial No. 707,652. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN G. SMITH, a citizen of the United States, residing at Hannibal, in the county of Marion and State of Missouri, have invented certain new and useful Improvements in 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 appertains to certain improvements in bicycles, though equally applicable to analogous vehicles or machines.

It has for its object to guard more particularly against the pivoting or turning of the steering-wheel sharply at right angles to the other wheels in case of contact with an obstruction, as also to insure safety against accident to the rider and to impart a pulling action to said wheel in contradistinction to a pushing action, as in bicycles of the ordinary type, and to otherwise improve the bicycle.

It consists, primarily, of means adapted to support the steering-wheel fork or post in position, so that it will be caused to travel in an arc in turning, thus guarding against suddenly pivoting or swiveling, and of means adapted to impart a pulling action or power to the steering or guiding wheel, all substantially as hereinafter more fully disclosed, and specifically pointed out in the claim.

It will be understood that latitude is allowed herein as to details, as they may be changed without departing from the spirit of my invention and the same yet remain intact and be protected.

In the accompanying drawings, illustrating the preferred embodiment of my invention, Figure 1 is a side elevation of a bicycle with the same applied thereto. Fig. 2 is a plan view thereof, parts being broken away. Fig. 3 is a detail section showing more fully the salient features of my invention. Fig. 4 is a cross-section of the same, taken through Fig. 2 on the line 4 4, looking in the direction of the arrow.

In carrying out my invention I provide a bicycle-frame 1 in its general outlines the same as the ordinary form, with the exception that the tubular portion thereof, through which the post at the upper end of the fork passes, is removed farther back, permitting the forward end portions to slightly project, as at 1^a. The projections 1^a have secured therewith brackets 2, one with each projection, said brackets having forwardly-extending integral arms 2^a, formed or cast integral at their forward ends with an annular half-bearing box 3 with a pendent central pin 3^a. I also employ two other brackets 4, each having an annular half-bearing box 4^a, adapted to register with the half-bearing box 3, said half-bearing box 3 having applied thereto a pendent ring 4^b or provided with a flange, also compassing the half-bearing box 4^a at the meeting edges between said half-bearing boxes to render the same dust-tight, said half-bearing boxes forming a box containing ball-bearings $4^\times$, reducing friction. The pendent pin 3^a passes through an opening in the half-bearing box 4^a and has an annular or circular groove 1^b intermediarily of its ends, and through opposite slots or keyways 1^c of the half-bearing box 4^a are inserted keys 1^d, adapted to engage said groove of said pin, and thus hold the removable half-bearing box 4^a in place and yet permit it to pivot or turn through said keys on the pin or pivot 3^a, the purpose of which will be presently apparent.

The lower half-bearing boxes of the brackets 4 are integrally formed with extensions or arms 4^e, terminating, preferably, in arcuate plates brazed or otherwise suitably fixed to the steering-wheel fork or post 5, whereby said fork or post is adapted to be moved by the rider under the action of the handle-bar. With the parts thus arranged—*i. e.*, the points of connection between said fork or post and the frame so disposed that a line passing therethrough will fall in front of the steering-wheel axle—a pulling action or power will be imparted to said wheel in contradistinction to a pushing action, as heretofore, whereby are secured greater facility of propulsion and increased application of power therefor. The primary feature or purpose of the invention, however, is, as before stated, to prevent the steering-wheel pivoting or swiveling sharply at right angles to the line of travel of the other wheels, as heretofore experienced, in the event of the steering-wheel contacting with an obstruction, and thus risking the throwing of the rider. The steering-wheel, with its fork, being caused to move with and at the

free ends of pivoted brackets, as herein, will describe, should said wheel contact with an obstruction, the arc of a circle, and thus have the effect to keep said wheel in substantial alinement with the line of movement or travel of the other wheels, thus preventing the liability of precipitating the rider from his seat and being thrown violently to the ground and hurt or injured.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

In a bicycle, or like machine, the frame having, at its forward end, brackets, each, comprising an upper fixed section having forwardly-circling arms terminating in a half-bearing box, and a lower or pivoted swiveling section having a half-bearing box connecting with the aforesaid half-bearing box, and having its inner end adapted to occupy a position relatively central of said circling arms, said inner end of the pivoted section adapted to be fixed or connected with the steering post or fork and said circling arms adapted to permit the passage of said steering post or fork between them, substantially as set forth.

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

STEPHEN G. SMITH.

Witnesses:
T. C. MOORE,
J. A. SYDNEY.