(No Model.)

E. D. THOMPSON.

BICYCLE.

No. 598,234. Patented Feb. 1, 1898.

Fig. 1.

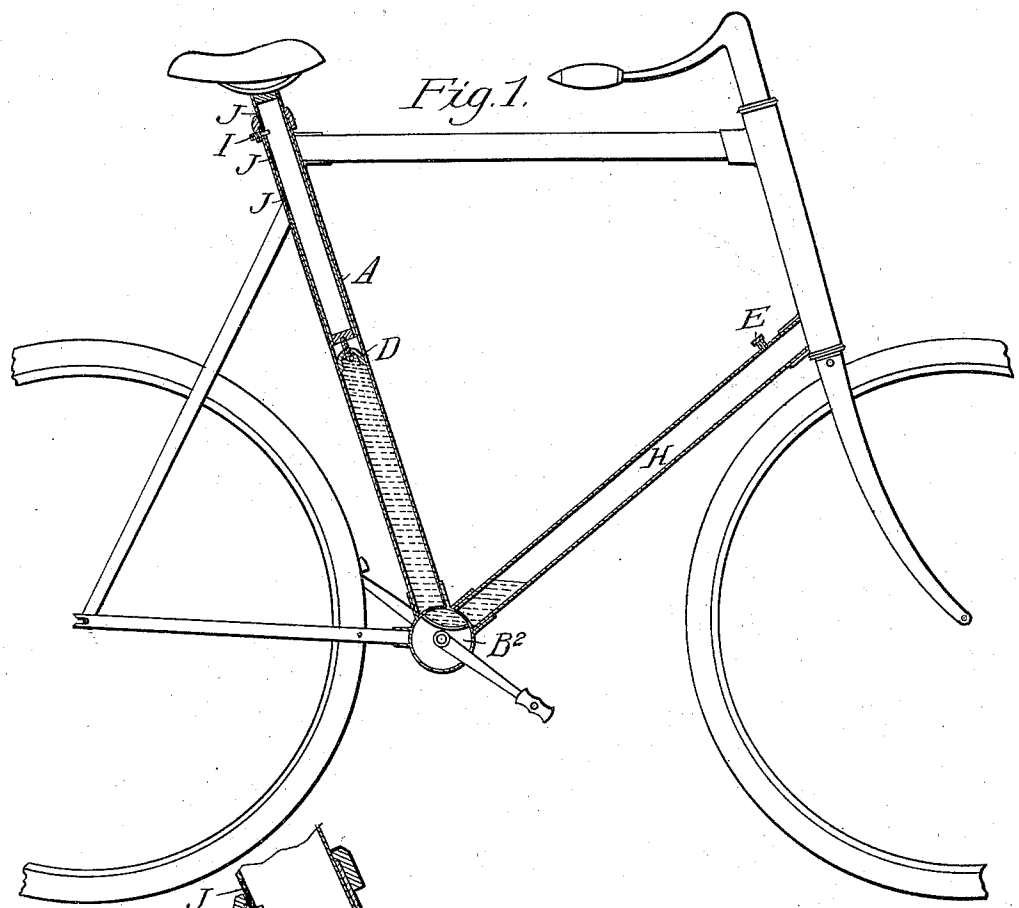
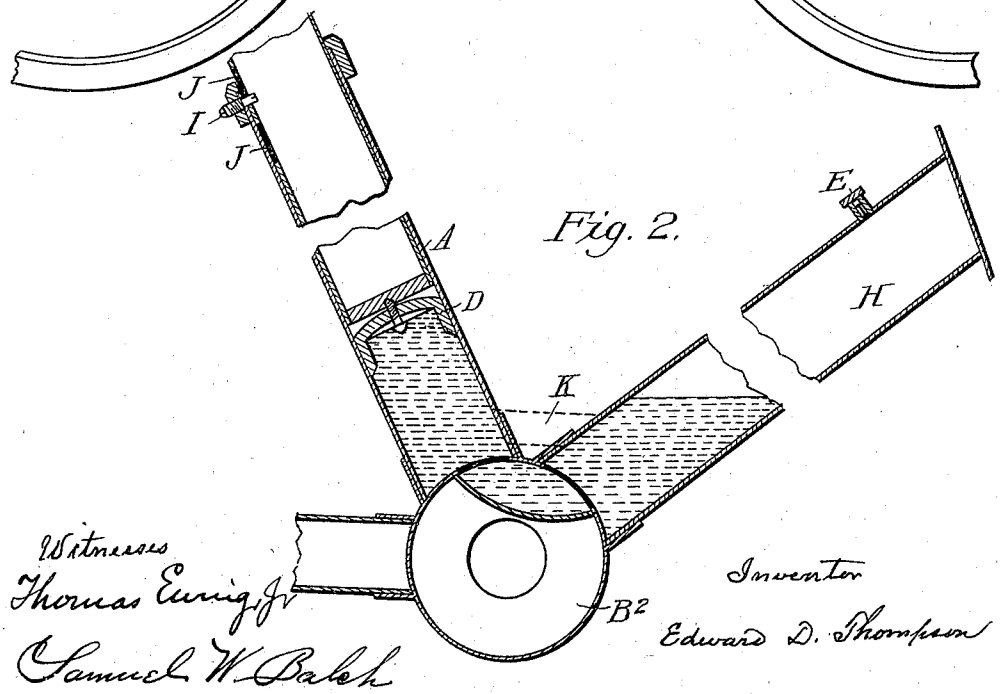


Fig. 2.



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UNITED STATES PATENT OFFICE.

EDWARD D. THOMPSON, OF LAWRENCE, KANSAS.

BICYCLE.

SPECIFICATION forming part of Letters Patent No. 598,234, dated February 1, 1898.

Application filed January 8, 1896. Renewed October 24, 1896. Serial No. 610,000. (No model.)

To all whom it may concern:

Be it known that I, EDWARD D. THOMPSON, a citizen of the United States of America, residing at Lawrence, county of Douglas, State of Kansas, have invented certain new and useful Improvements in Bicycles, of which the following is a specification.

My invention has for its object to provide a pneumatic bicycle-seat—that is to say, a seat supported by compressed air—and by the construction I adopt I form the air-chamber in one of the framing-tubes of the bicycle, thus permitting the invention to be applied to the forms of framing now in common use without increase of parts or undue increase of weight.

For these purposes my invention, broadly speaking, consists in inserting in one of the framing-tubes of the bicycle a piston upon which is supported the seat, the piston being free to move within the tube, and the chamber thus formed having a valve whereby air may be forced into the air-chamber until the expansive force thereof is properly adjusted to support the desired weight upon the saddle. In order to avoid the necessity of making the piston air-tight, I have devised a form of my invention in which a column of liquid is interposed between the piston and the portion of the chamber which contains the compressed air. To do this, the chamber, which is under pressure, consists of the main tube and a forward-inclined tube, the interiors of which are in communication at or near their lower ends and contain a liquid which in the main tube supports the piston, the weight upon which is balanced by the air-pressure upon the liquid column in the inclined tube. The inclined tube is, in the diamond-frame machine, the lower forward tube of the frame, and in the drop-frame style is either of the forward-inclined tubes. It will thus be seen that my invention is capable of being varied in detail without departing from its essential features.

In the accompanying drawings, which form a part of this application, Figure 1 is a side elevation, partly in section, of a bicycle with my invention applied thereto. Fig. 2 is an enlarged sectional view showing the part of the bicycle containing my invention.

The main tube A receives in its upper end the seat-supporting post C, which fits therein as a piston, the bottom of the post being packed at D to form a tight joint and close the tube. In order to prevent the seat carried by the post C from swinging from side to side, a screw I projects within the tube A and into one of the vertical closed slots J in the post, whereby the latter is guided and allowed a limited vertical movement. Several slots are provided, either one of which may be used in connection with the screw I, according to the reach of the rider.

The interior of the main tube A, at its lower end, is connected with the lower portion of the inclined tube H of the frame, and this connection may be either made through the crank-shaft bracket B^2, as shown, or through a connecting-tube K, as indicated by dotted lines in Fig. 2. The chamber thus formed in the two tubes is entirely closed, but has in it near the upper part of the diagonal tube H a valve E, through which air may be pumped in.

A suitable liquid entirely fills the main tube A from the bottom of the piston downward and the lower part of the tube H and the connection between the two tubes and forms a liquid extension of the piston. The quantity of this liquid must be sufficient to reach past the connection between the tubes and into the tube H in all positions of the piston when in use.

In a bicycle provided with this invention the expansive force with which the seat is held up may be adjusted for any weight of rider by varying the air-pressure within the air-chamber.

In applying my invention the screw I is first set into the appropriate one of the slots J, according to the reach of the rider. Air is then pumped into the tube H until the pressure is sufficient to force the seat up until the bottom of the slot J contacts with the screw I when the rider's weight is upon the saddle. With this adjustment there will be no upward movement of the seat when riding over an even surface, but it will yield downwardly whenever the bicycle runs over any obstacle, and shock to the rider is thus prevented.

In this application I do not claim broadly the combination of the main tube, a seat-post mounted to slide in the main tube and adapted to act as a piston, and a liquid seal in the

main tube between the piston and the air-chamber, as that is claimed in my application, Serial No. 609,784, filed October 23, 1896; but

What I do claim, and desire to secure by Letters Patent of the United States, is—

In a bicycle, the combination with the main tube and inclined tube of the frame, the interiors of which are in communication near their lower ends, of a seat-supporting post having a piston within the main tube, the inclined tube being provided with a valve, means for preventing the outward flow of air which has been forced in through the valve, and a liquid column interposed between the piston and the air-chamber so as to entrap air in the inclined tube, substantially as described.

Signed by me in New York city this 6th day of January, 1896.

EDWARD D. THOMPSON.

Witnesses:
SAMUEL W. BALCH,
HAMPTON D. EWING.