(No Model.)

F. LILLIBRIDGE.

SADDLE FOR BICYCLES.

No. 337,171. Patented Mar. 2, 1886.

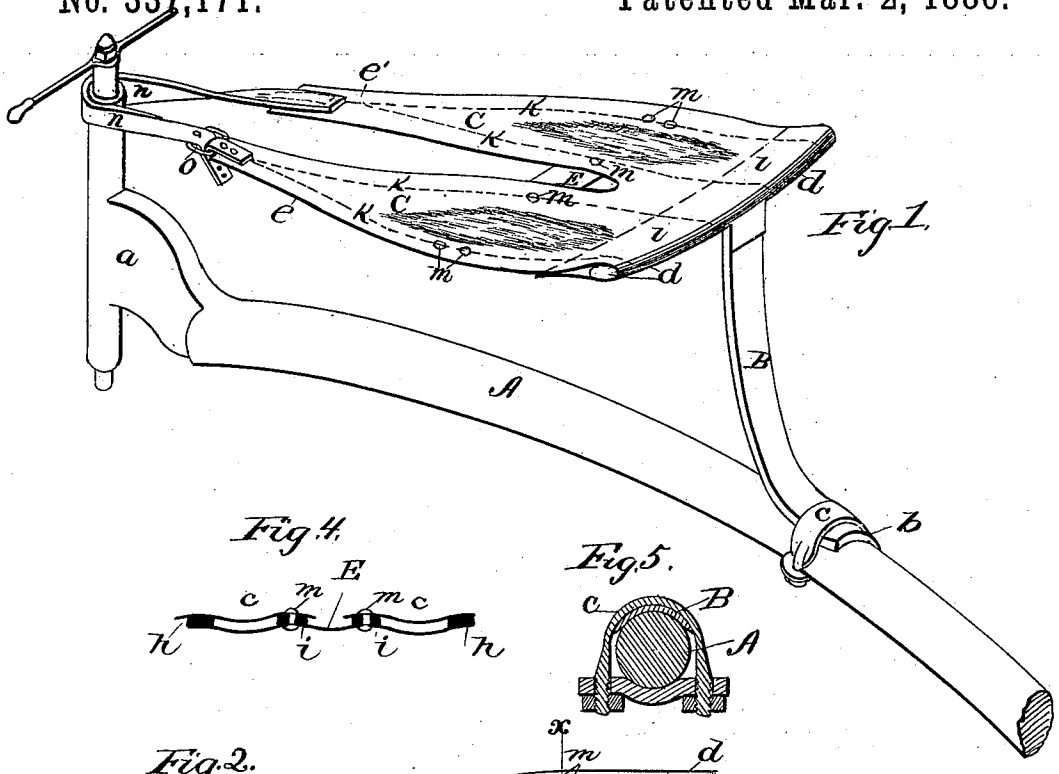


Fig. 1.

Fig. 4.

Fig. 5.

Fig. 2.

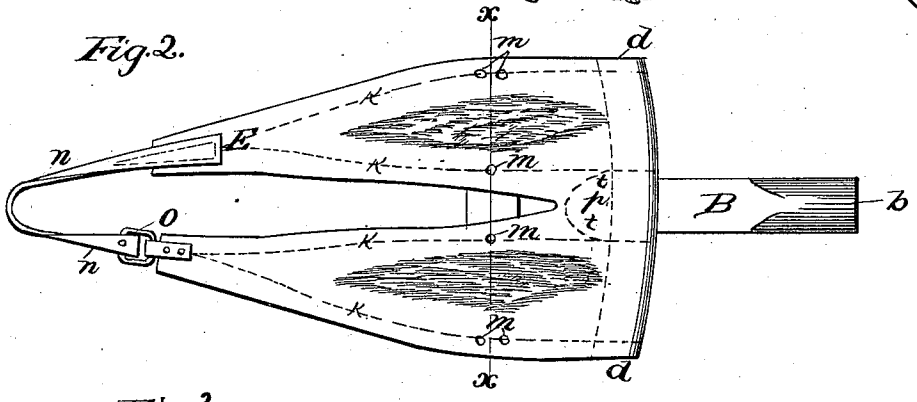
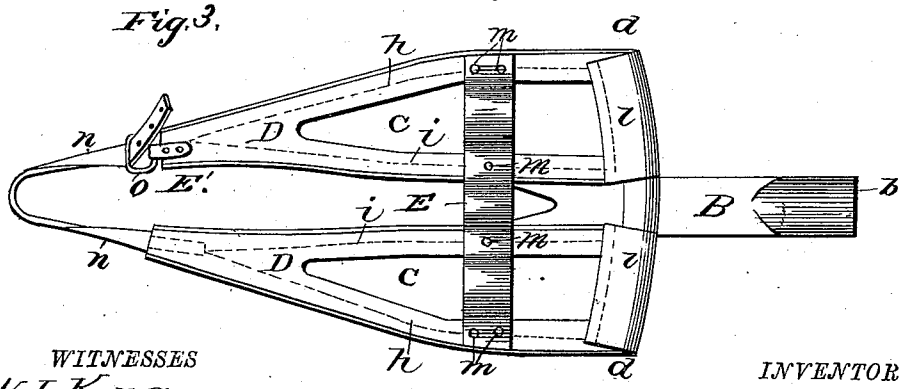


Fig. 3.



WITNESSES

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SADDLE FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 337,171, dated March 2, 1886.

Application filed March 30, 1882. Serial No. 56,838. (No model.)

To all whom it may concern:

Be it known that I, FREEMAN LILLIBRIDGE, a citizen of the United States, residing at Cedar Rapids, in the county of Linn and State of Iowa, have invented a new and useful Improvement in Saddles, of which the following is a specification.

This invention relates to saddles designed more especially to be used in connection with bicycles or other varieties of the velocipede family. It however may be found useful in other applications.

It has long been known or believed that the use of many forms of the velocipede family has had an injurious effect upon the user, arising, mainly, from the irritation of the parts in contact with the saddle, produced from its improper construction and the shuffling movement thereon, consequent upon the action required to impel the vehicle.

To obviate these injurious effects and to produce an adjustable elastic saddle at a small cost is the object of this invention.

In the accompanying drawings, Figure 1 is an isometrical representation of my improved saddle in connection with the upper or joint-end portion of the arched bar or backbone of a bicycle, of which Fig. 2 is a plan view. Fig. 3 is an under side view of the saddle, and Fig. 4 is a transverse section of the saddle on dotted line *x*. Fig. 5 is a cross-section of the spring-confining clamp and backbone.

In the figures, A represents the upper forward portion of the arching bar or backbone of a bicycle, having its forward end portion at *a* fitted in suitable joint form to connect with the yoke which spans the main wheel.

At B is represented a spring having its rear end portion at *b* fitted to engage the upper surface of the curved bar or backbone of the vehicle rearward of its joint-end portion, at which point it is securely fixed in an adjustable manner by means of a suitable screw-clamp, *c*, adapted to embrace the parts snugly, and by means of its screw-threaded portions serve to fix the spring firmly in its adjusted position on the curved bar. This spring, from the point of its connection with the curved bar or backbone, rises in an upward rearwardly-curving form, as clearly represented in Fig. 1, and its upper end portion is provided with a transverse bar, the lateral arms *d* of which project from the opposite sides of the spring-bar in a slightly forward-curving direction.

At C is represented the main upper or outer portion of the saddle, produced preferably from suitable leather, substantially in the bifurcated form represented in the drawings, its forward end portion, consisting of the arms *e* and *e'*, springing from its rear portion.

At D are represented suitable leather braces having their rear portions bifurcated, consisting of an outer arm, *h*, and an inner arm, *i*. These braces are placed on the under side of the main portion of the saddle, with their closed end portions, D, forward centrally on the forward portions of the arms *e* of the main portion of the saddle, and their arms *h* and *i* extending rearward thereon slightly within the outer edge thereof. In this position the parts are secured to each other by suitable stitching, substantially as represented in the dotted lines *k*. The rear end of this saddle portion is folded over the lateral arms *d* of the spring and are fixed thereto by stitching, (represented by the dotted line *l*,) or instead of the stitching rivets may be employed, or the parts may be fixed in position to the transverse arms in any other suitable known manner.

At E is represented a transverse bar, made from spring-plate material, suitably curved, as shown at Fig. 4. This curved spring-bar is placed crosswise of the saddle on its under side at a suitable point rearward, and is fixed in position to the saddle by means of suitable rivets, *m*, which are passed through the parts and properly riveted; but instead of the rivets suitable screw-bolts may be employed.

At *n* is represented a strap of suitable dimensions, stitched or otherwise fixed to the forward end of the arm *e* of the saddle, from which point it extends round the forward end of the joint portion of the curved bar or backbone, as shown, and returns to engage a suitable buckle, *o*, fixed to the forward end portion of the arm *e'* of the saddle. This buckle *o* may be of any suitable variety of the known buckles, and may be joined to the saddle portion by stitching, riveting, or otherwise, to produce a secure fastening. By means of this buckle-connection of the forward end of the saddle with the parts of the vehicle I produce

a ready means by which to increase or lessen the tension of the saddle.

It will be observed that by means of the adjustable connection of the spring-bar on the convex surface of the curving bar or backbone of the vehicle a change in its position forward or rearward thereon will operate to increase or lessen the tension of the saddle, and by such adjustment of the spring the length of the saddle may be varied, and such change of position of the fastening will also place the spring in a position relatively with the direction of the strain upon the saddle as to cause it to exert a greater or less sustaining force. The position of this spring relatively with the saddle may also readily be changed by the employment of any suitable packing placed between the foot of the spring and the curved bar or backbone, either forward or rearward of the screw-clamp which connects it with the bar or backbone.

By means of these adjustments, in connection with the forward adjustment of the saddle, my improved elastic saddle is capable of any adjustment within the limits of the devices to adapt it to the wants or requirements of the party using it.

In the foregoing I have described my improved saddle as having its forward portion bifurcated, which construction I prefer; but it may be constructed in such a manner as to cause a depression of the lengthwise center of the forward portion of the saddle without the central opening. This may be readily produced, when the saddle-cover is in one piece, by cutting from its rear end the portion *p*, embraced between the dotted lines *t*, as shown in Fig. 2, and joining the cut edges by seaming or otherwise; but in this construction a greater width of material will be required from which to produce the saddle.

Springs as heretofore employed to support flexible saddle-seats on bicycles have been of a bow shape, curving from their connection with the rear portion of the saddle downward and forward under the seat, and rigidly fixed to the backbone of the vehicle at a point under the saddle. The rear end of this form of spring, under the weight of the rider mounted upon the seat, is made to move in an upward forward curve, which operates to place the body of the rider in an unpleasant and unnatural position, and is found very fatiguing. Further, to descend inclines with safety the rider, to maintain his equilibrium, must occupy a rearward position on the saddle to prevent forward overtipping of the vehicle, and in this position this class of spring is rendered rigid or unyielding and becomes inefficient as a spring. In my construction the spring from its connection with the rear end of the saddle extends downward and rearward and connects with the backbone of the vehicle at a point below and rearward of the saddle, and in use when depressed under the weigt of the rider in any position on the saddle its movement will be downward and forward in an easy natural curve, and this downward forward yielding movement of the spring will vary with the varying position of the rider upon the seat, increasing with his varying rearward position on the saddle and decreasing with his varying forward movement thereon.

I claim as my invention—

1. A flexible saddle-seat consisting, essentially, of the bifurcated upper outer surface having bifurcated braces, substantially as hereinbefore set forth, joined to its under surface, for the purpose stated.

2. The bifurcated saddle-seat having the under surface strengthened by means of forked braces which follow the lines of its outer and inner edges, in combination with the metallic flexible braces located as shown, by means of which the seat at that point is kept extended, substantially as and for the purpose hereinbefore set forth.

3. The bifurcated saddle-seat provided on its under side with the forked braces which follow the line of its outer and inner edges, and the metallic flexible transverse brace, in combination with the vertical jointed portion of the vehicle, to which it is attached as a support for its forward portion by means of an adjustable encircling-strap, which enables the seat to be tightened or relaxed at will, substantially as and for the purpose hereinbefore set forth.

4. The combination of the bifurcated saddle-seat having the under surface strengthened by means of forked braces which follow the lines of its outer and inner edges, and the metallic flexible brace located as shown, by means of which the seat at that point is kept extended, with the curved uprising spring adjustably attached at its foot to the curved bar and provided with a transverse bar at its upper and free end, substantially as and for the purpose hereinbefore set forth.

5. The combination of the curved uprising spring adjustably attached at its foot to the backbone of the vehicle and provided with a transverse bar at its upper and free end, the bifurcated saddle-seat connected therewith, having its under surface strengthened by the forked braces which follow the lines of its outer and inner edges, and the metallic flexible brace, located as shown and for the purpose stated, with the vertical jointed portion of the vehicle, to which the saddle-seat is attached as a forward support by means of an adjustable encircling-strap, which enables the seat to be tightened or relaxed independently of the adjustable spring, substantially as and for the purpose hereinbefore set forth.

6. The combination of the bifurcated saddle-seat having its under surface strengthened by means of a forked brace which follows the line of its inner and outer edges, with the curved uprising spring adjustably attached at its foot to the curved bar and provided with a transverse bar at its upper free end, substantially as and for the purpose hereinbefore set forth.

7. The combination of the bifurcated saddle-seat having its under surface strengthened by means of forked braces which follow the lines of its inner and outer edges, and the curved uprising spring adjustably attached at its foot to the curved bar of the vehicle and provided at its upper free end with a transverse bar with vertical jointed portion, to which the saddle-seat is attached as a support by means of an adjustable encircling-strap, which enables the seat to be tightened or relaxed independently of the adjustable spring, substantially as and for the purpose hereinbefore set forth.

8. The combination, with the backbone of the vehicle and with the flexible saddle, of the curved uprising spring provided at its upper end with a transverse bar and adjustably attached at its lower foot and to the backbone of the vehicle in such a manner that the seat can be raised or lowered as desired, substantially as and for the purpose herein set forth.

9. A spring which forms the rear support of a flexible saddle-seat and is adjustably attached at its lower end to the backbone of a bicycle.

10. A spring which forms the rear support of a flexible saddle-seat and is adjustably attached at its lower end to the backbone of a bicycle by means of an encircling-clip.

11. A spring which forms a rear support of a flexible saddle-seat and is attached at its lower end to the backbone of a bicycle at a point which is below and to the rear of said seat, for the purpose specified.

12. A spring which forms the rear support of a flexible saddle-seat which is attached at its foot to the backbone of a bicycle, and which has its flexible portion situated to the rear of and below the seat, for the purpose specified.

13. A spring which forms the rear support of a flexible saddle-seat and which bears on its lower end a curve, which, in connection with the curve of the backbone, to which it is adjustably attached, forms an adjustment in height, substantially as and for the purpose set forth.

14. A flexible saddle-seat suspended at its front end from the neck or upright jointed portion of the backbone, and suspended at its rear end by a spring, the lower end of which is attached to the backbone, and the flexible portion of which is situated to the rear of and below the seat, substantially as and for the purpose set forth.

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Witnesses:
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