No. 613,050. Patented Oct. 25, 1898.

B. F. WHEELER.

BICYCLE SADDLE.

(Application filed Oct. 12, 1895.)

(No Model.) 2 Sheets—Sheet 1.

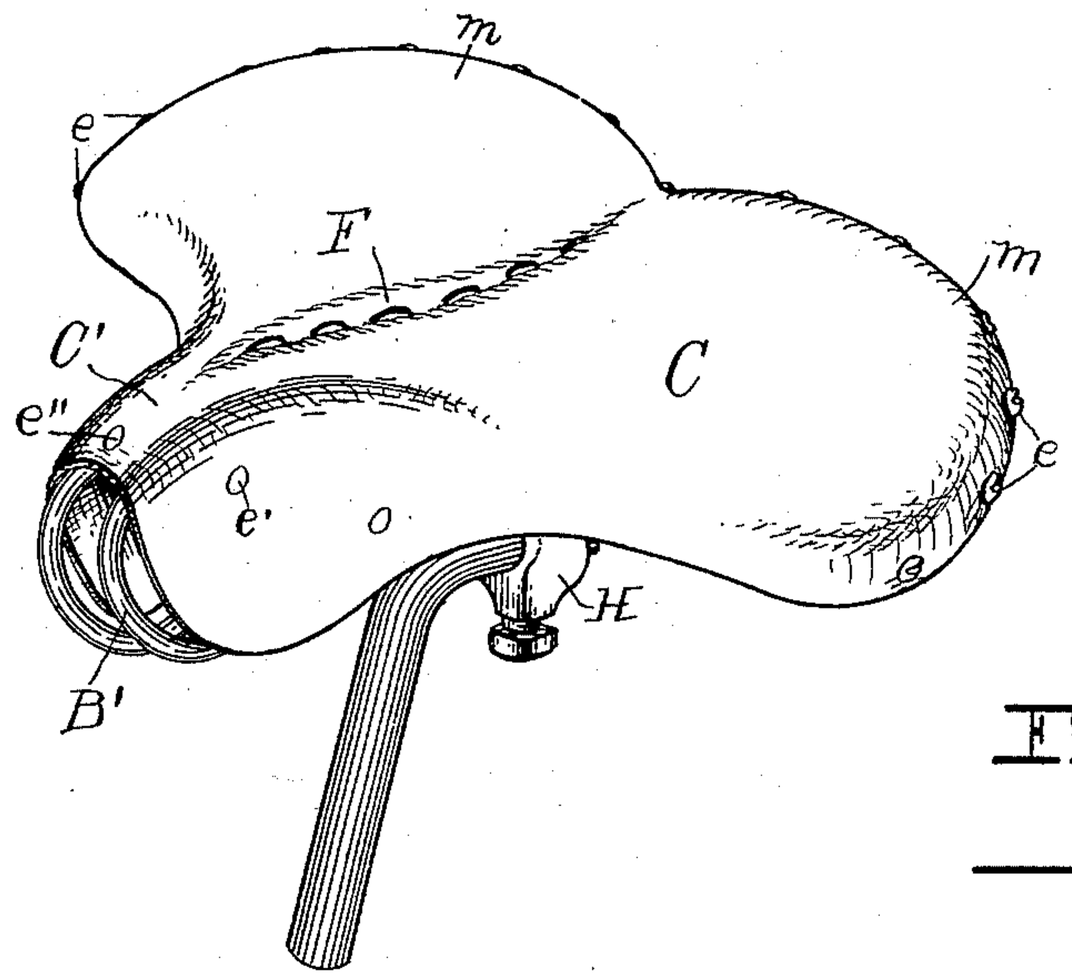

Fig. 1.

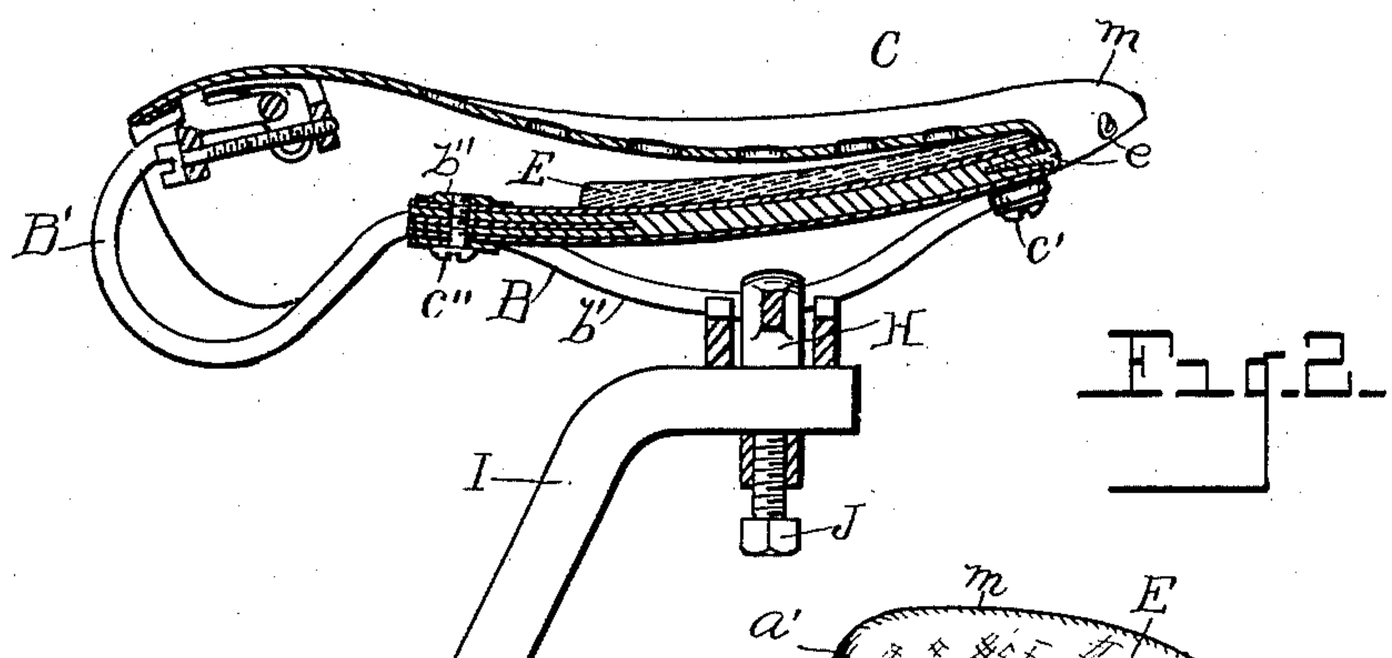

Fig. 2.

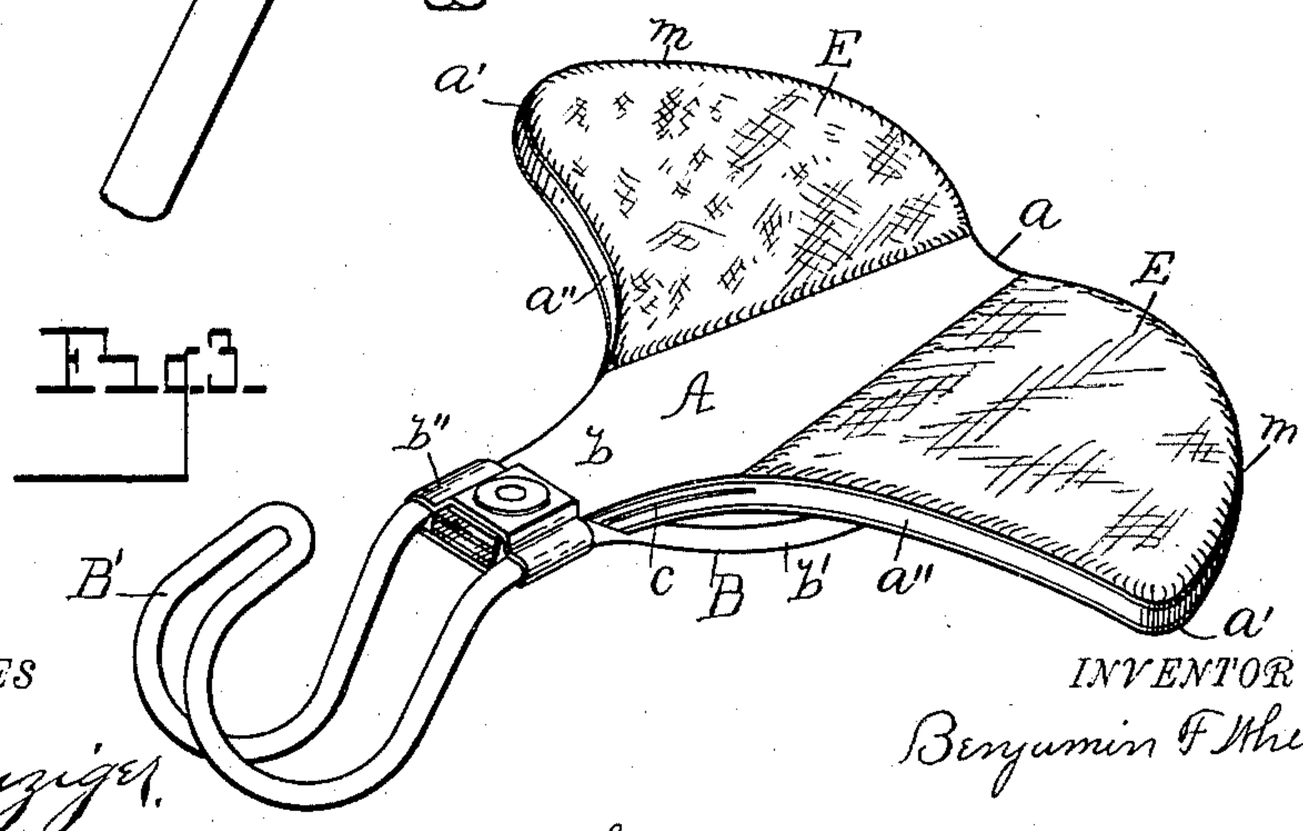

Fig. 3.

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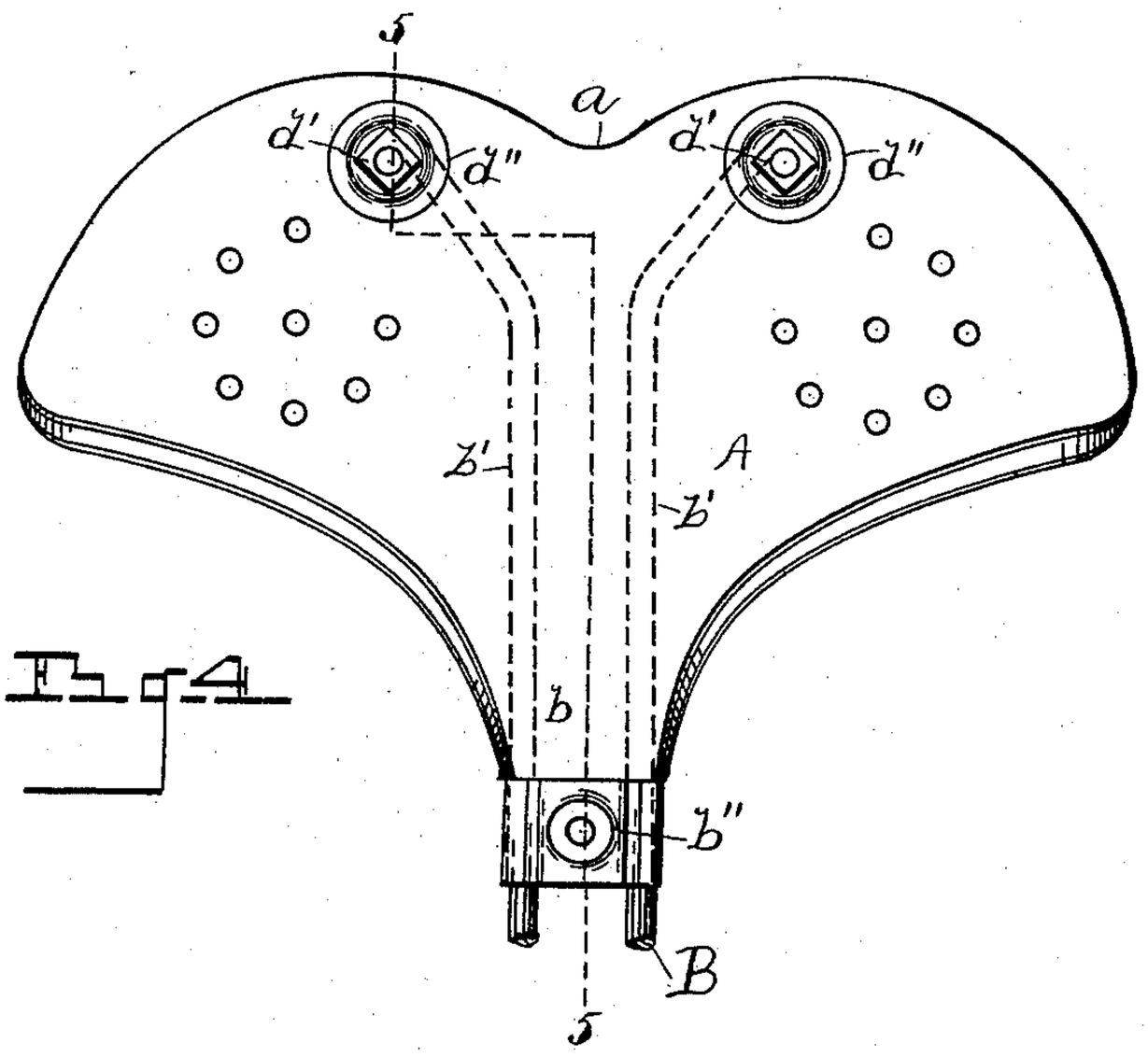

Fig. 4.

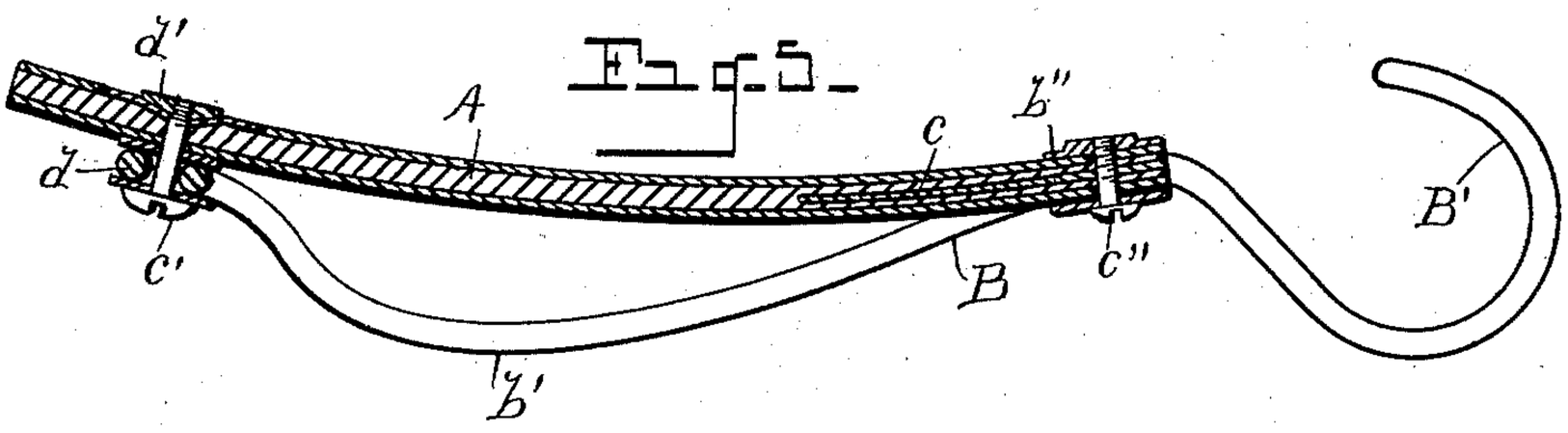

Fig. 5.

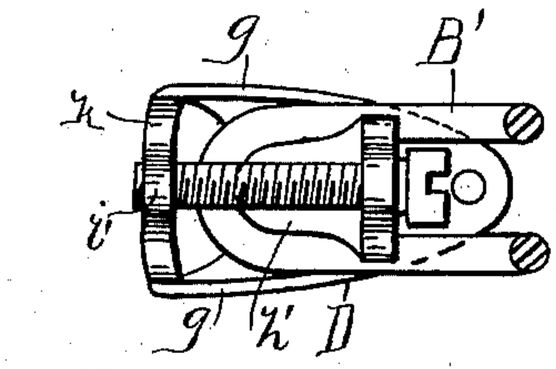

Fig. 6.

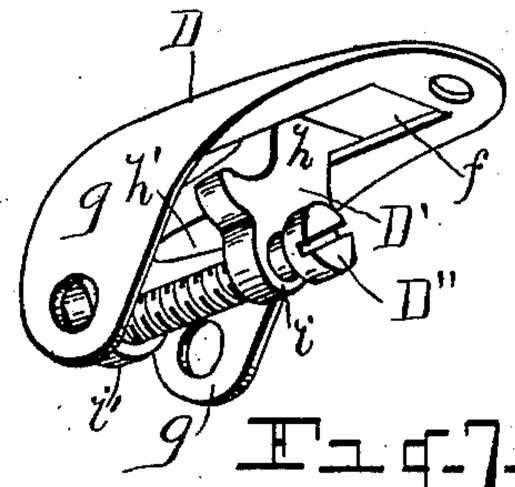

Fig. 7.

WITNESSES

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UNITED STATES PATENT OFFICE.

BENJAMIN F. WHEELER, OF DETROIT, MICHIGAN, ASSIGNOR TO THE WHEELER SADDLE CO., OF SAME PLACE.

BICYCLE-SADDLE.

SPECIFICATION forming part of Letters Patent No. 613,050, dated October 25, 1898.

Application filed October 12, 1895. Serial No. 565,462. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. WHEELER, a citizen of the United States, residing at Detroit, in the county of Wayne, State of Michigan, have invented certain new and useful Improvements in Bicycle-Saddles; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in bicycle-saddles, as hereinafter more fully set forth, and pointed out particularly in the claims.

The objects of the invention are to produce a bicycle-saddle of such shape and construction as to obviate the discomfiture and prevent the physical injury incident to use of the bicycle-saddle as commonly made and to produce a light, strong, and serviceable saddle which shall afford a broad and comfortable seating-surface and upon which the leather is so mounted as to prevent it from sagging and assuming an unnatural and imperfect shape, which objects are attained by the construction and arrangement of parts illustrated in the accompanying drawings, in which—

Figure 1 is a general perspective of my improved saddle. Fig. 2 is a central longitudinal section through the same. Fig. 3 is a perspective of the wooden frame or cantle, to which the rear of the leather is attached, and the spring mounted thereon having a forwardly-extending coil which supports the nose or pommel of the saddle-leather and to which it is adjustably secured, said view also showing the felt pads mounted upon the upper surface of the frame. Fig. 4 is a plan view of the frame or cantle with said pads removed and the coil of the spring broken away. Fig. 5 is a sectional view on line 5 5 of Fig. 4. Fig. 6 is a plan view showing the attachment of the nose-piece with the loop of the spring, which appears in section; and Fig. 7 is a perspective view of said nose-piece.

Referring to the letters of reference, A designates the cantle or frame of the saddle, which is made up of thin layers of wood, the grain of the two outer layers crossing at right angles the grain of an interposed layer and all of said layers being perfectly united by a coating of glue between their meeting faces. The frame is pressed into shape by placing the glued layers of veneer, while the glue is soft, between dies of the requisite formation and subjecting it to heavy pressure, in which position the frame remains until the glue thoroughly sets, giving the frame a concavo-convex form, producing a very light and strong frame. A depression is formed in the rear of the frame, as at a, from which point the back of the frame curves outward to the extreme side points a', from whence the front portion of the frame curves inward and forward, as at a'', terminating in the reduced neck portion b. To strengthen this neck portion of the frame, a slot is sawed therein and a reinforcing-piece c, the grain of which extends longitudinally of said neck, is inserted in said slot and securely glued in place.

B designates the spring, upon which the frame A of the saddle is mounted and which consists of spring-steel wire of suitable gage so shaped as to form a looped coil B′ at the forward end thereof and the parallel curved portion b', extending rearwardly from said coil, the termination of said curved portions diverging and being provided with an eye adapted to receive a screw c', by means of which the ends of said spring are secured to the rear portion of the frame. The forward end or neck portion b of the frame is attached to said spring by means of the clamping-plate b'', which is secured to and embraces the wire of said spring adjacent to the coil B′, forming a socket which receives the reduced end of the neck b of the frame and in which said neck is securely retained by means of the screw c'', which passes through the opposite sides of said plate and the interposed neck of the frame, as clearly shown in Figs. 2 and 5. The screws c', which secure the rear ends of the parallel curved portions b' of the spring, pass through the eyes d therein and through said frame A, receiving on their upper ends

a beveled nut d', which is seated in a countersunk washer d'', let into said frame, whereby said parts are securely retained in place, suitable washers being interposed between the eye in the spring and the surface of the frame and between said eye and the head of the screw c'.

The leather C, which affords the seating-surface of the saddle, is shaped in suitable dies, so as to conform to the general contour of the frame A, and is secured at the back to said frame by suitable wood-screws e. The leather at the front curves inward and forward, forming a reduced nose or pommel C', which is comparatively short, being but little in advance of the seating-surface of the saddle and which is supported upon the looped end of the coil B' of the spring, being attached thereto by a nose-piece consisting of two parts, of which the part D is a plate having a longitudinal slot f therein and having the depending wings g, which are apertured to receive the rivets e', whereby the aprons of the nose of the leather are secured thereto, the leather at the nose being also secured to the plate D by means of the rivet e'', passing through the forward end of said plate, whereby said plate or part D of the nose-piece is firmly secured in the nose of the leather. The complementary portion of the nose-piece consists of the part D', which is provided with a flanged neck portion h, which engages and is adapted to slide in the slot f of the part D, and having also a nose portion h', which is embraced by and lies in the loop at the end of the coil B'. (Clearly shown in Fig. 6.) Passing freely through an aperture in the depending portion i of the part D' is a screw D'', which extends therethrough and engages in a tapped boss i' in the cross-bar k of the part D, whereby by rotating said screw it is screwed into the boss i', thereby drawing forward the part D, to which the leather is attached, taking up any slack which may occur therein, making a simple and effective means for adjusting the tension of the leather. The part D as it is drawn forward by said screw slides upon the looped end B' of the coil and is guided in its movement by the flanged neck h of the part D', which extends through the slot f therein, making a simple and secure support for the nose of the saddle and providing for the ready adjustment of the tension of the leather thereof.

Mounted upon the upper face of the frame and covering the surface thereof upon each side of the center are two pads E, of felt or other suitable material, which serve as a cushion interposed between the leather and the frame A of the saddle and overcoming the rigidity which would otherwise be incident when the leather is lying partly or wholly upon said frame. In its normal position, however, the leather stands distant above said pads and is brought in contact therewith at such times only as the weight of the rider causes the leather to spring downward when the wheel passes over an obstruction or an uneven surface. The tension on the leather prevents it remaining long in contact with the pads at any time, thereby providing for free circulation of air between the pads and leather, obviating the heating of the leather seat, as would result were the pads and leather in continuous contact.

Experience in cycling has demonstrated the fact that a comparatively hard saddle which shall conform to the contour of the buttocks of the rider affords the most natural and comfortable support, especially for long-distance riding. It is also desirable that the saddle shall be flat and broad, so that the weight of the rider may be supported on the tuberosity of the ischium and the gluteal muscles. This form of saddle affords a natural and hygienic support, and by reason of the peculiar shape of the frame, which extends under the whole seating-surface of the leather and prevents the leather from sagging beyond an undue limit, the objection of the narrow ridge as in the common saddle, which brings the support for the rider almost entirely between the legs, is overcome.

The depression at the rear of the frame, opposite the nose of the saddle, leaves the leather slack through the center and causes the leather, when tension is placed thereon, to draw from the high points of the curve m of the frame on each side, so that the sides of the leather are always higher than the center, and the rider is so supported that the prostate gland is free from pressure or friction.

The depression F in the center of the leather strengthens the wall thereof and prevents an abrupt settling of the leather immediately back of the nose-piece when the weight of the rider is on the saddle. This depression also serves to prevent any undue pressure upon the prostate gland.

The curved parallel portions b' of the spring, which describe the arc of a circle and upon which the clip H for attaching the saddle to the seat-post I is mounted, enable said saddle to be tilted, so that its surface may stand at any angle desired by sliding said clip back and forth upon the arc of said spring, the clip H being of any of the approved forms which are caused to clamp the spring of the saddle to prevent movement thereof when adjusted by the same set-screw J which secures said clip to the saddle-post.

Having thus fully set forth my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a bicycle-saddle, the combination of the broad wooden frame, the spring mounted on said frame and attached at its front and rear ends thereto, said spring having the yielding forwardly-extending portion and the curved portion near the rear end thereof, and the leather supported on said frame and spring.

2. In a bicycle-saddle, the combination of the broad wooden frame A having the curved

back and the forwardly-curved portions at the front, the spring upon which said frame is mounted having the forwardly-extending coil, and the leather mounted on said frame and spring.

3. In a bicycle-saddle, the combination with the cantle, the spring mounted thereon having a loop at its forward end, the leather secured at the back to said cantle, the two-part nose-piece, one of which parts is riveted in the nose of the leather and is provided with a longitudinal slot and with a tapped aperture in a cross-piece at the end thereof, the complementary portion of said nose-piece consisting of a part which engages the loop of said spring and which is provided with an extended neck portion which engages freely in the slot of the part attached to the leather, and the screw passing freely through one of said parts and screwing into the other part, substantially as set forth.

4. In a bicycle-saddle, the combination of the cantle, the spring attached thereto and having a forwardly-extended loop, the leather attached at the rear of said cantle, the nose-piece consisting of the part D which is riveted to the nose of the leather and is provided with a longitudinal slot therein, the complementary portion of said nose-piece consisting of the part D′ which is engaged by the loop of said spring and which is movably engaged in the slot of the part D, and the screw passing freely through the part D′ and screwing into the part D.

5. In a bicycle-saddle, the combination of the wooden frame presenting a broad surface and having a depression in the center of the back thereof, the spring fastened to said frame at the front and rear and provided with a loop or coil extending forward of said frame, the leather secured to the back of said frame with screws and adjustably attached at its forward end to the coil of said spring, said leather having a depression in the rear thereof to conform to said frame, and with a depressed central channel extending to the nose of the saddle.

6. In a bicycle-saddle, the combination of a solid wooden frame shaped into concavo-convex form having the curved back and laterally-extending side portions and the reduced forwardly-extending neck, the back of said frame rising above the reduced forward portion thereof and having an inward curve at the center of the rear, the leather shaped to conform to the contour of said frame having at its back a central inward curve which coincides with the curve of said frame and having the central longitudinal depression leading from said rear inward curve and extending forward to a point adjacent the pommel, the pads interposed between the leather and the frame separated to form an open space between them, the central depressed portion of the leather depending between said pads, the spring attached to said frame at the front and rear, its forward end projecting beyond said frame and attached to the pommel of the saddle-leather.

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

BENJAMIN F. WHEELER.

Witnesses:
HORACE R. WHEELER,
EDGAR S. WHEELER.