No. 645,256. Patented Mar. 13, 1900.

A. L. GARFORD.

BICYCLE SADDLE.

(Application filed Apr. 22, 1898.)

(No Model.)

Fig. 1.

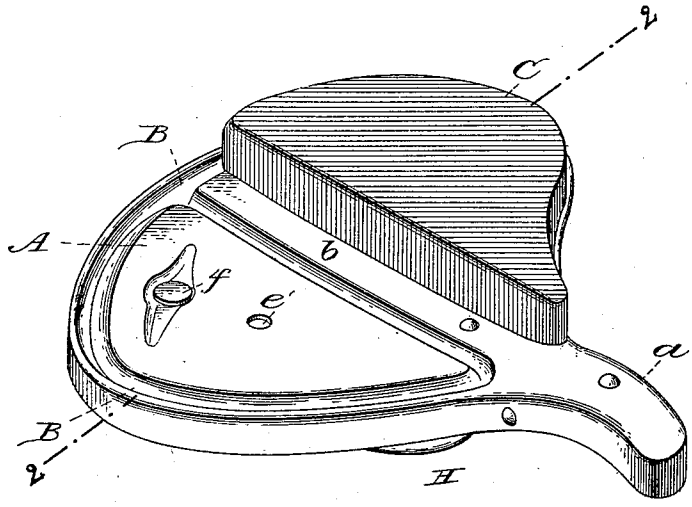


Fig. 2.

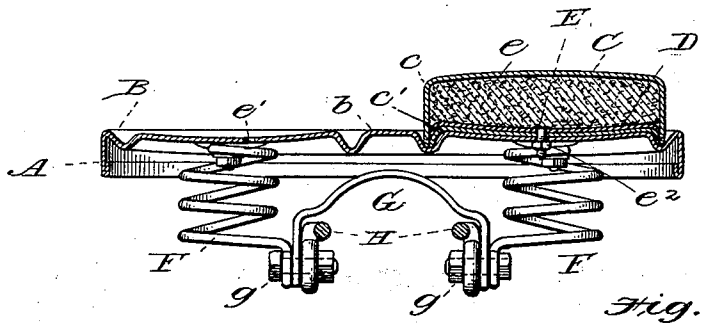


Fig. 3.

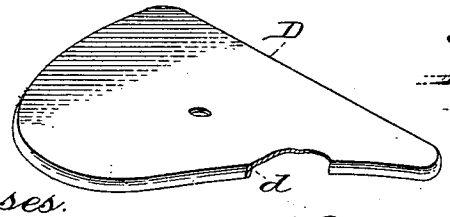
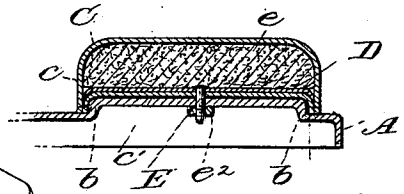
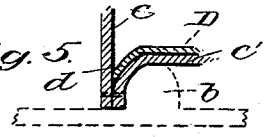


Fig. 4.



Witnesses.
J. T. Cross.
J. Henderson

Fig. 5.



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UNITED STATES PATENT OFFICE.

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BICYCLE-SADDLE.

SPECIFICATION forming part of Letters Patent No. 645,256, dated March 13, 1900.

Application filed April 22, 1898. Serial No. 678,522. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR L. GARFORD, a citizen of the United States, and a resident of Elyria, State of Ohio, have invented certain new and useful Improvements in Bicycle-Saddles, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to certain improvements in bicycle-saddles, the objects of which are to generally improve, strengthen, and simplify devices of this character and at the same time produce a convenient, comfortable, and easy-riding seat provided with suitable cushions or pads adapted to prevent injurious pressure against the perineum and such delicate parts of the person.

With these and other objects in view my invention consists in the construction, combination, and arrangement of parts, such as will be hereinafter clearly described, and pointed out in the claims made hereto.

Referring to the accompanying drawings, in which similar letters of reference are used to indicate similar parts, Figure 1 is a perspective view of my improved saddle, showing one of the cushions removed. Fig. 2 is a transverse section taken about on the line 2 2, Fig. 1. Fig. 3 is a detail perspective view of one of the flanged reinforcing-plates of the cushion, a small portion being broken away to more clearly illustrate its contour. Fig. 4 is a detail sectional view of one of the cushions and showing a slightly-modified form of supporting-frame. Fig. 5 is a detail section, on an enlarged scale, illustrating more clearly the manner in which the cushion and its reinforcing-plate are constructed and arranged.

In carrying out my invention I have provided a suitable frame A, of substantially-oval shape, converging at its forward end into a suitable pommel *a*, the said frame being preferably formed of a single piece of sheet metal and stamped into the desired shape.

B designates irregular-shaped grooves or channels which are formed in the frame A on both sides of its central portion *b* and are of a shape conforming to that of the outline of the cushions and are adapted to receive the depending edges of said cushions, as will be hereinafter described, being adapted also to give additional stiffness and rigidity to the frame portion. These grooves or channels B are formed at the same time the frame A is being formed, one operation being all that is necessary to give the proper shape.

C designates the cushions, which are of a shape substantially as shown in the drawings and are located so as to accommodate the ischial bones and afford a natural and comfortable seat. The outer coverings *c* of the said cushions are made of leather or other suitable material and are sewed to a bottom piece *c'* so as to leave a projecting flange, as *d'*, on the bottom outline of said cushions, as clearly shown in Fig. 5 of the drawings. Located directly above the bottom piece *c'* is a reinforcing-plate D, which lies parallel with said bottom piece and has preferably formed on its edges a downwardly-projecting flange *d*, which fits snugly between the outer covering *c* and its bottom piece *c'*. Above this plate D and filling the intervening space between the top covering is a suitable pad *e*, which may be made of felt, hair, or any other suitable material. A bolt E, provided with screw-threads on its lower end, is riveted to the plate D and extends downwardly and through the bottom piece *c'* and through an opening *e'*, provided in the frame A at the proper place for its reception, and is provided with retaining-nuts e^2 on its end and by means of which the cushions are securely held to the frame A.

The depending flange formed on the lower outline of the cushions by the edges of the covering C and its bottom piece *c'* being sewed together, as illustrated, and the reinforcing-plate D, having the projecting flange *d*, heretofore described, extending between them, is adapted to bear against the shoulders formed by the grooves or channels B, and when the plate D is held down in place, as by the bolt E, the downwardly-projecting edges formed by the leather *c* and *c'* and the flange *d* will be held securely in the groove B, with the inner edges of the downwardly-projecting flange thus formed binding against the inner wall of the groove toward the center. The cushions are thus securely held in their proper positions and afford a substantial and durable

seat that will retain its shape and not be easily displaced.

While I have illustrated and described the grooves or channels B as adapted to receive the flanges of the cushions, it is obvious that other means may be employed for accomplishing the same result—as, for instance, the upwardly-projecting portion *b*, formed on the frame A, against which the flanges may bear, forming substantially the equivalent of the inner wall of the groove, as clearly illustrated in Fig. 4 of the drawings. This form would give as good results as the preferred form described, the main object being to form a shoulder against which the flanges and reinforcing-plate can bear to stiffen and securely hold the cushion in position.

F designates coil-springs, secured to the under side of the frame A by bolts *f*, the heads of which are countersunk in the said frame A, so as not to interfere with the cushions, the lower ends of said springs being bolted to an arched connecting-strap G and the supporting-spring H by means of the bolts *g*. The forward end of this spring H is secured to the under side of the horn portion and carries the usual clamp (not shown) for securing the saddle to the seat-post.

It is clear that in the foregoing construction my improved saddle presents, among other things, a feature of importance not provided for in prior constructions of saddles, viz: I am enabled to secure a desired given height of the cushions or pads above the level of the seat-frame proper sufficient to allow of the desired space between the two pads without involving the necessity of an excess of padding material in each pad. In other words, where the thickness of the pad in cross-section extends from the base of a depression in the seat-frame, in which the pad rests, to the top of the pad the pad is apt to readily get out of shape and to lose its form to a considerable degree by the constant jar under the weight of the rider. In my construction, while securing the same height of cushion with the necessary space between the pads, I obviate this objection of excessive thickness of the pads by having the portion immediately under each pad raised above the surrounding groove or frame portion instead of depressing the same below the level of the frame, having at the same time sufficient padding or cushion material above the raised portion or panel to answer all the requirements for the comfort and ease of the rider.

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

1. In a bicycle-saddle, a seat-frame having a portion or panel on each side of an axial line formed in said frame raised above the level of the immediately-adjacent surrounding portions of the frame, said raised portions corresponding in outline to the shape of the cushioned pads adapted to be provided thereon, the walls forming said outlines of said raised portions being substantially abrupt and two cushioned pads one provided upon each raised portion having downwardly-projecting flanges on the outlines of their bases, said flanges adapted to impinge upon the abrupt walls of said raised portions, substantially as described.

2. In a bicycle-saddle, a seat-frame having a portion or panel on each side of an axial line raised above the level of the immediately-adjacent surrounding portions of the frame, said raised portions corresponding in outline to the shape of the cushioned pads adapted respectively to be provided thereon, the walls forming said outlines of said raised portions being substantially abrupt and two cushioned pads one provided upon each raised portion having depending flanges on the outlines of their bases, a reinforcing-plate provided in the base of each pad and means for clamping said plates and pads upon said raised portions, substantially as described.

3. In a bicycle-saddle, a seat-frame having a portion or panel on opposite sides of the center integral with the frame, raised above the level of the immediately-adjacent surrounding portions of the frame, said raised portions corresponding in outline to the shape of the cushioned pads adapted respectively to be provided thereon, the walls forming said outlines of said raised portions being substantially abrupt, and a cushioned pad provided upon each raised portion having depending flanges on the outlines of their bases adapted to impinge about the abrupt walls of said raised portions, a reinforcing-plate located above the bottom piece of each of said pads or cushions and securing-bolts provided through said plates and seat-frame for securing said plates and pads upon said frame, substantially as described.

4. In a bicycle-saddle, the combination of a rigid base having in its top surface and on opposite sides of the center two endless grooves which bound and form two raised panels and two pads having downwardly-projecting flanges adapted to said grooves which said pads nest upon and are clamped to said panels, substantially as described.

5. In a bicycle-saddle, the combination of a rigid base, having in its top surface and on opposite sides of the center, two endless grooves which bound and form two raised panels, two cushioned pads having a reinforcing-plate provided in their bases which pads nest upon said panels and are clamped thereon through the medium of a securing-bolt passing through said reinforcing-plates and frame of the saddle, substantially as described.

6. In a bicycle-saddle, the combination of a rigid seat-base having, on opposite sides of the center, two panels raised above the level of the immediately-adjacent surrounding portions of the frame, with pads, each of which consists of a bottom leather having down-turned edges, a clamping-plate resting thereon, a cup-shaped top leather, felt or other

suitable material inclosed between said top leather and clamping-plate, the depending edges of said two leathers being stitched together and a bolt coöperating with each clamping-plate for fastening the pad upon its panel, substantially as specified.

7. In a bicycle-saddle, a frame provided with suitable shoulders, cushions having downwardly-projecting flanges on the outlines of their bases, a reinforcing-plate having a deflected edge adapted to extend between the flanges of the cushion-cover, the said deflecting edges and flanges adapted to bear against the shoulders formed on the frame, substantially as described.

8. In a bicycle-saddle, a seat-frame provided with suitable shoulders, cushions having downwardly-projecting flanges on the outlines of their bases, a reinforcing-plate having a deflected edge adapted to extend between the flanges of the cushion-cover, the said deflecting edges and flanges adapted to bear against the shoulders formed on the frame, and a bolt riveted to said reinforcing-plate and adapted to pass through the frame and be secured thereto, substantially as described.

In witness whereof I have hereunto set my hand this 15th day of April, A. D. 1898.

ARTHUR L. GARFORD.

Witnesses:
H. S. FOLLANSBEE,
FRED NORTON SMITH.