

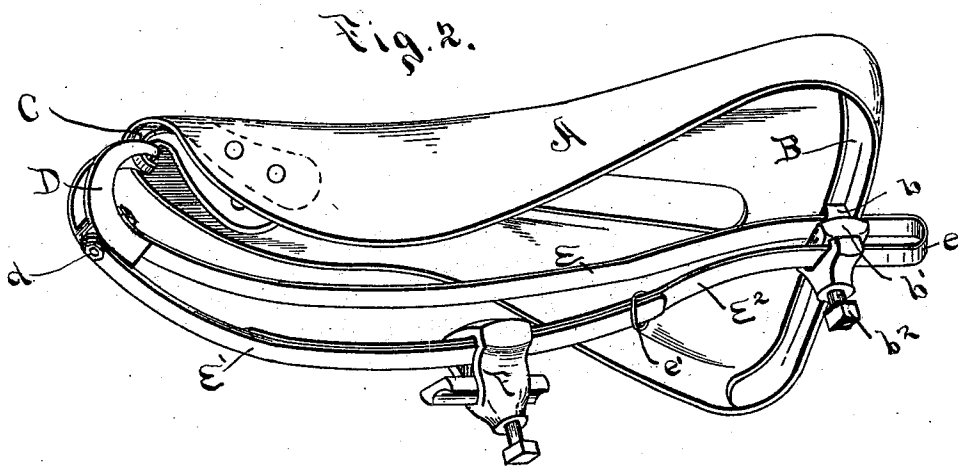
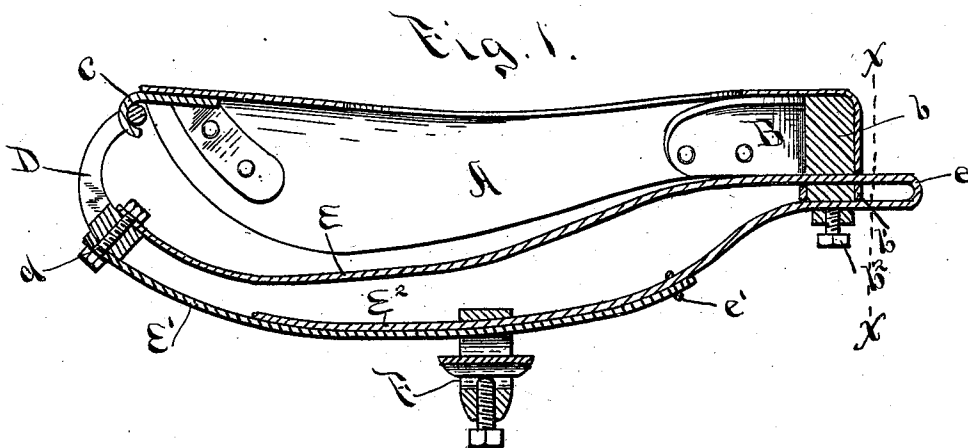
(No Model.)

2 Sheets—Sheet 1.

J. H. SAGER.  
SADDLE FOR VELOCIPEDES.

No. 511,363.

Patented Dec. 26, 1893.



WITNESSES;  
J. E. Bates.  
G. W. M. Roden.

INVENTOR,  
*James W. Sager*  
BY  
*Howard L. Osmond*  
ATTORNEY.

(No Model.)

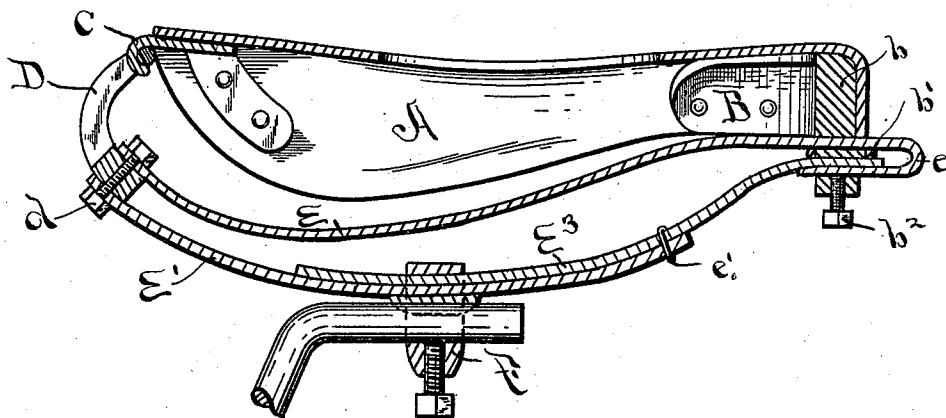
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Fig. 3.



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By Howard A. Osgood  
Att'y.

# UNITED STATES PATENT OFFICE.

JAMES H. SAGER, OF ROCHESTER, NEW YORK, ASSIGNOR TO THE RICH & SAGER COMPANY, OF SAME PLACE.

## SADDLE FOR VELOCIPEDES.

SPECIFICATION forming part of Letters Patent No. 511,363, dated December 26, 1893.

Application filed December 14, 1892. Serial No. 455,199. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES H. SAGER, a citizen of the United States, and a resident of the city of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Saddles for Velocipedes and Similar Vehicles, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal sectional view of one form of my saddle. Fig. 2 is a perspective view thereof, and Fig. 3 is a longitudinal sectional view of another form of the same saddle.

My invention consists in the improvements in saddles for velocipedes and similar vehicles hereinafter described and claimed, and the object thereof is to provide a strong and elastic saddle in which the saddle leather is held taut, while the weight of the rider is supported by springs connected to the saddle and acting independently of the means by which the leather is held taut.

Referring to the drawings, A is the saddle leather.

B is the cantle supporting bar, which is fastened to the saddle leather by rivets, as usual.

C is the pommel hook attached to the saddle leather by rivets, as usual.

D is a slotted block or eye, which is preferably of the curved form shown in the drawings; the solid end of this eye is perforated for the passage of a bolt *d*. On the upper and lower sides of the solid part of the eye, are laid the ends of two springs *E E*. The ends of the springs are perforated, and the bolt passes through these perforations and through the eye D. By tightening the nut on the bolt, the ends of the springs and the eye are firmly fastened together.

The spring *E*, which may be called also the stretching bar, is fastened on the upper side of the solid part of the eye D and extends backward under the saddle leather to and through a horizontal perforation through a lug attached to the cantle supporting bar B. The stretching bar *E* is recurved as at *e*, so that it passes backward through said perforation in the lug *b* and thence passes forward from the cantle end of the saddle, directly under the upper part of the stretching bar *E*

to form the spring *E*<sup>2</sup>. The curved end *e* is not necessary, but is more convenient on account of the roundness of the end, which prevents clothing from catching on the spring, and also because it forms a loop, giving a means for attaching a tool bag to the saddle. Around the lug *b* and between the two parts of the spring *E*, is a collar *b'*. A set screw *b*<sup>2</sup> presses on the lower portion of the spring *E*, which presses against the collar *b'* which presses the upper portion of the spring *E* against the upper side of the perforation in the lug *b* and fastens the parts rigidly together.

The spring *E'* is fastened on the under side of the solid part of the eye D. This spring extends directly backward from the pommel end of the saddle and under the part of the spring *E*<sup>2</sup>. A clip *F* of any suitable form serves to fasten the springs *E'* and *E*<sup>2</sup> to the saddle post of a velocipede. The spring *E*<sup>2</sup> extends directly forward from the lug *b* through and in front of the clip *F* and lies upon the spring *E'*. The spring *E'* extends back of the clip and under the spring *E*<sup>2</sup>. A collar *e'* fastens the rear end of the spring *E'* to the spring *E*<sup>2</sup>. I prefer that the springs *E'* and *E*<sup>2</sup> should be bent on a curvature of smaller radius than that of the general curvature of the spring *E*, in order to give greater stiffness to the combination, than if the springs *E'* and *E*<sup>2</sup> were parallel with the spring *E*.

The springs *E'* *E*<sup>2</sup> extend without recurving to the clip *F* from their points of attachment respectively at the eye D and the lug *b*.

The perforated lug *b*, collar *b'* and the set screw *b*<sup>2</sup> constitute a clamp attached to the cantle supporting bar.

Fig. 3 shows another form of the same saddle hereinbefore described, in which the stretching bar is bent upon itself at *e*, passes through the perforation in the lug *B* and is cut off at that point. The part corresponding to *E*<sup>2</sup> is a separate spring *E*<sup>3</sup>, which is fastened in the perforation in the lug *b*, between the collar *b'* and the lower curved part of the spring *E*. In other respects, the two forms are identical. The latter device, however, renders it easier to replace the spring *E*<sup>2</sup> if it should break. The stretching bar may be

separated from the part or spring  $E^2$  by cutting off the curved end  $e$  on the line  $x-x$  of Fig. 1.

The saddle leather A may be stretched and held taut by unfastening the set screw  $b^2$  and pulling the lug  $b$  backward upon the springs, and, after the leather has been properly stretched, tightening the set screw  $b^2$ . The curvature of the parts  $E'$  or  $E^2$  and the parts  $E'$  and  $E^3$  makes it possible to adjust the tilt of the saddle in the clamp F.

My device constitutes a compound spring saddle, in which the parts  $E'$  and  $E^2$  or  $E'$  and  $E^3$  act against the part E on the truss principle. The part E forms a constant longitudinal tension support to the saddle leather A and prevents sagging of the saddle leather, and substantially excludes the "hammock" principle from my device by reason of the limited spring action of the part  $E'$ . The lower springs  $E'$   $E^2$  or  $E'$   $E^3$  may be increased or decreased in stiffness, in proportion to the increase or decrease of the radius of their combined curvatures. The two overlapping springs  $E'$   $E^2$  together form a half elliptical spring whose curvature is away from the spring or part E; the ends of the springs  $E'$   $E^2$  are not curved, but are longitudinal at the ends of the saddle and make acute angles with the bar E at the points of attachment thereto. The straightening of the half elliptic spring, thus formed, by pressure upon the saddle leather causes a longitudinal thrust at the attachments with the eye D and the clamp  $b$ . The stretching bar E, however, prevents any change of tension of the saddle leather by the straightening of the springs  $E'$   $E^2$  as it is fastened to the saddle leather by the eye D and the clamp  $b$ . In the combination of parts the bar E is a tension member and the springs  $E'$   $E^2$  are thrust members and together form a truss support for the saddle leather. The thrust members  $E'$   $E^2$  of this combination, being curved and of spring material, permit a spring action in the thrust members of this truss support.

It will be seen that, in forward action of the saddle, the pommel end is supported by a single spring  $E'$  only, but that in backward action of the saddle, the cantle end is supported by the spring  $E^2$  or  $E^3$  and by that portion of the spring  $E'$  which extends backward from the clip F, so that the saddle is supported by a light spring for forward action and by strong springs for backward action.

What I claim is—

1. In a saddle for velocipedes, the combination of a saddle leather, an elastic stretching bar rigidly connected to the pommel end thereof and to the cantle end thereof, and otherwise unattached between its ends and overlapping springs disposed under said stretching bar and rigidly connected respectively to said cantle and pommel ends at acute angles thereto, and a suitable clip whereby said two springs are fastened one under the other to a velocipede, said overlapping springs

with said stretching bar composing a spring support for said saddle, substantially as described.

2. In a saddle for velocipedes, the combination of a saddle leather, an elastic stretching bar rigidly connected to the pommel and cantle ends thereof, and otherwise unattached between its ends a spring disposed under said bar and rigidly connected at an acute angle to the rear end thereof and extending forward from the point of connection, a spring disposed under said bar at an acute angle thereto and rigidly connected to the forward end thereof and extending backward therefrom and under said first spring and a suitable clip whereby said two springs are fastened together and to the saddle support of a velocipede, substantially as described.

3. In a saddle for velocipedes, the combination, with a saddle leather provided with a pommel hook and a cantle bar having a clamp attached thereto and an eye adapted to engage said pommel hook, of an elastic stretching bar rigidly attached to said eye and extending to and through said clamp, and otherwise unattached between its ends a pair of curved springs arranged under said stretching bar at acute angles thereto, one rigidly attached to said eye and extending backward therefrom and the other rigidly fixed in said clamp and extending forward therefrom and overlapping said first spring and a clip attached to said two springs and to the saddle support of a velocipede, substantially as described.

4. In a saddle for velocipedes, the combination of a saddle leather, an elastic stretching bar rigidly connected to the pommel end thereof and to the cantle end thereof, and otherwise unattached between its ends a clip, springs disposed under said stretching bar and rigidly connected respectively to said cantle and pommel ends and extending without recurving directly from such points of attachment to the clip, whereby said springs are fastened together and to a velocipede and with said stretching bar compose a spring support for said saddle, substantially as described.

5. In a saddle for velocipedes, the combination of a saddle leather, an elastic stretching bar rigidly connected to the pommel end thereof and to the cantle end thereof, and otherwise unattached between its ends a clip, and springs disposed under said stretching bar and rigidly connected respectively to said cantle and pommel ends and extending directly therefrom to a suitable clip whereby said springs are fastened together and to a velocipede and with said stretching bar compose a spring support for said saddle, substantially as described.

6. In a velocipede saddle, a pommel, a cantle and a flexible seat attached at opposite ends to the same, in combination with a downwardly curving, semi-elliptical spring rigidly attached at its opposite ends to said pommel

and cantle respectively, and attached at its middle and lower portion to the frame work of the velocipede, and an elastic stretching bar located between said seat and said spring, 5 said bar being rigidly attached at its opposite ends to said pommel and cantle respectively, and otherwise unattached between its ends, the length of said bar between the pommel and cantle being less than the length of said spring between said pommel and cantle, sub- 10 stantially as set forth.

JAMES H. SAGER.

Witnesses:

QUENTIN W. BOOTH,  
ASA W. RUSSELL.