(No Model.)

E. G. LATTA.

VELOCIPEDE SADDLE.

No. 376,322. Patented Jan. 10, 1888.

Fig. 1.

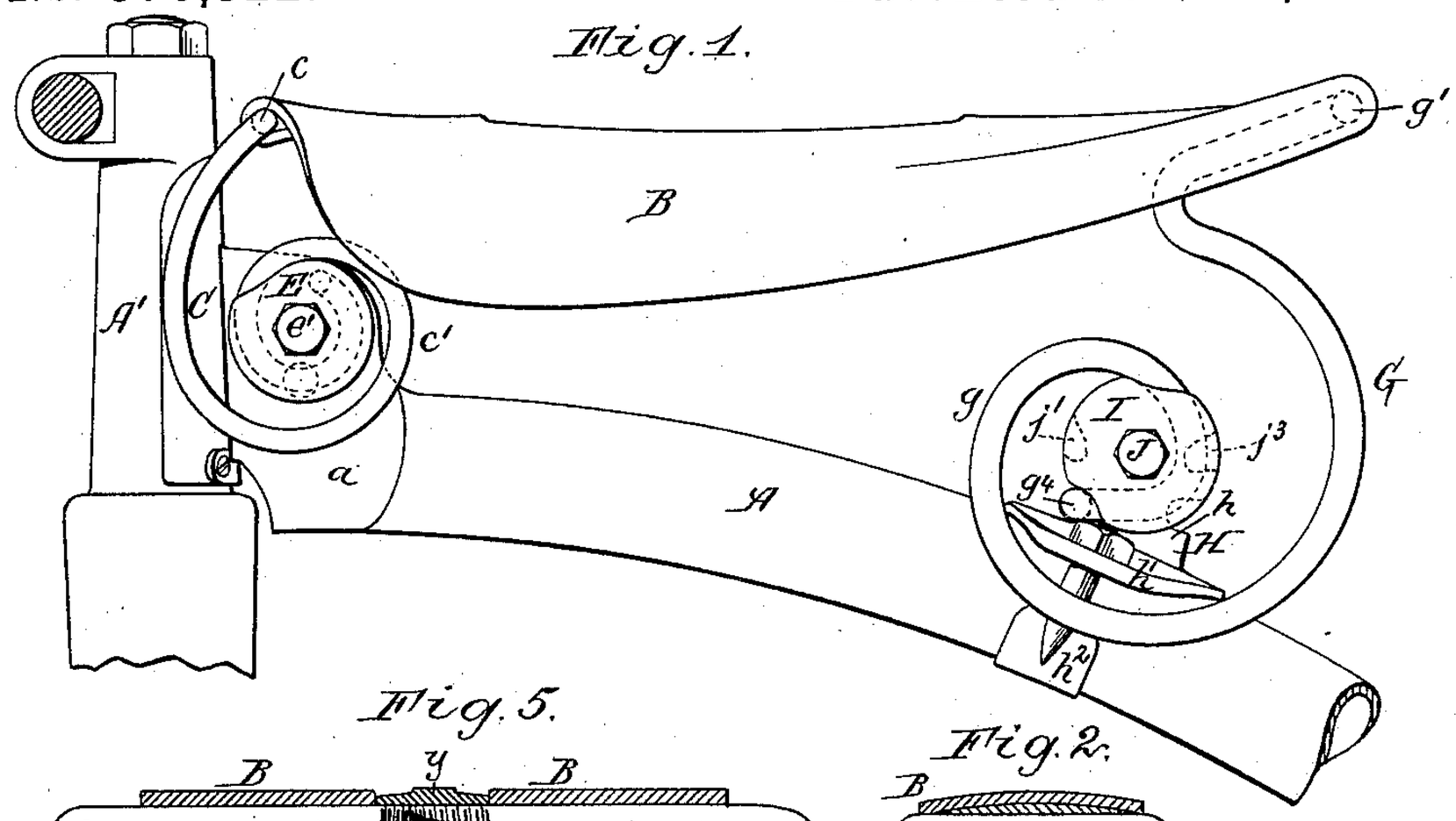


Fig. 5.

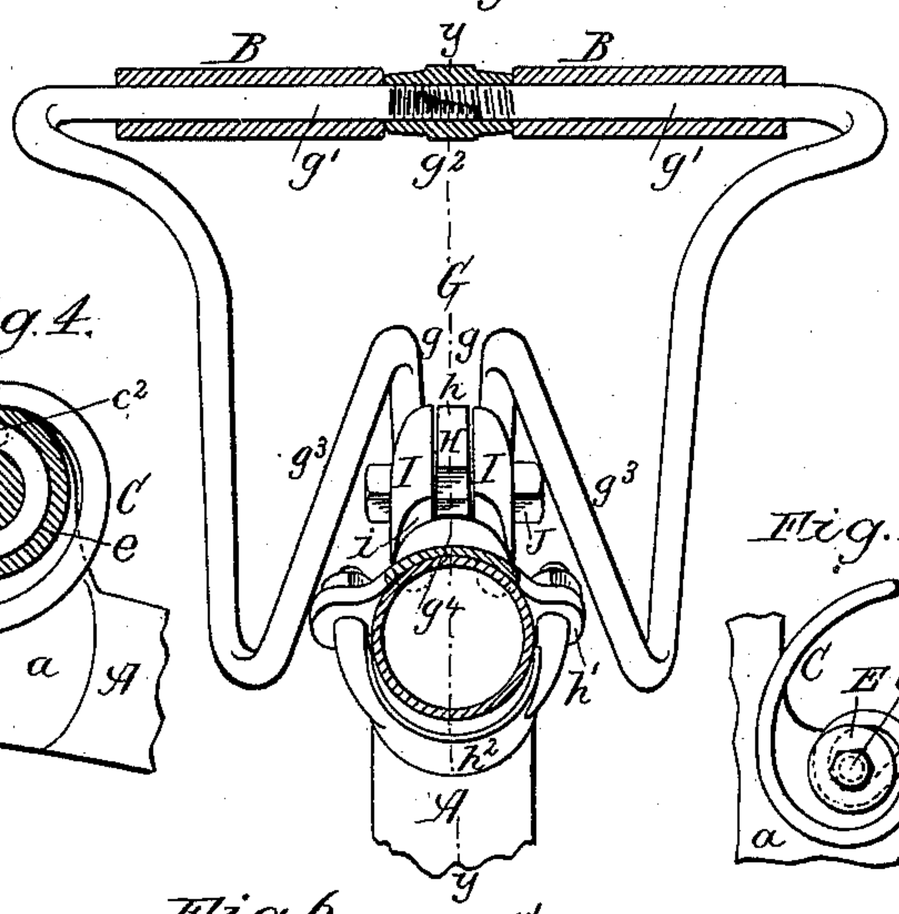


Fig. 2.

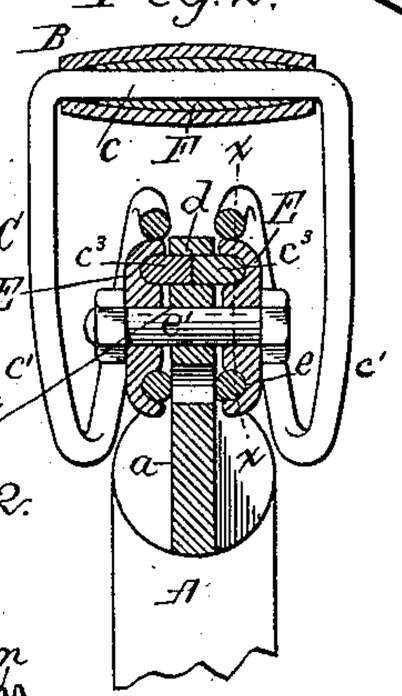


Fig. 3.

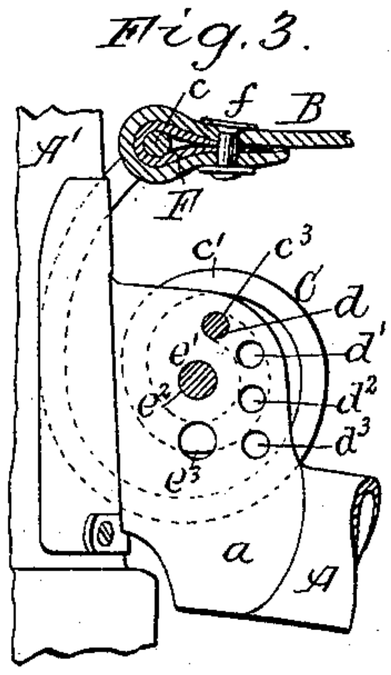


Fig. 4.

Fig. 12.

Fig. 10.

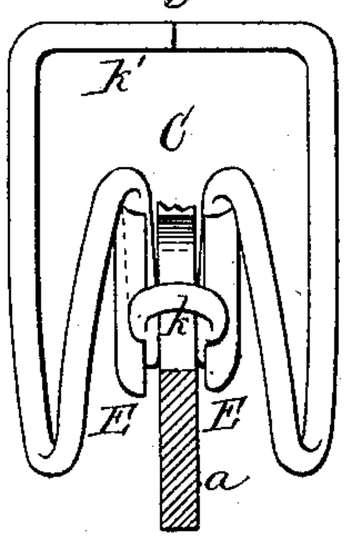


Fig. 6.

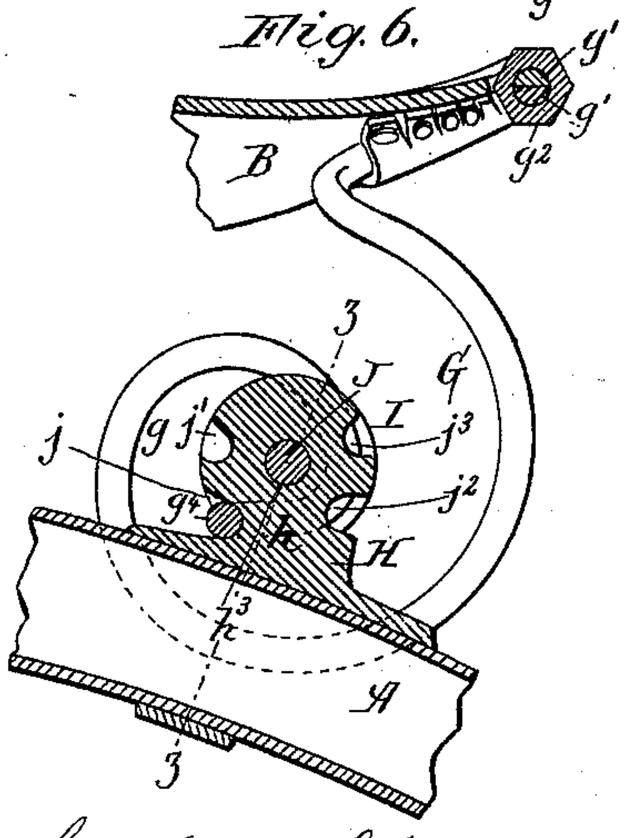


Fig. 7.

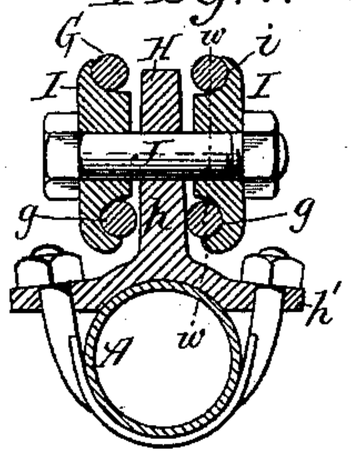


Fig. 9.

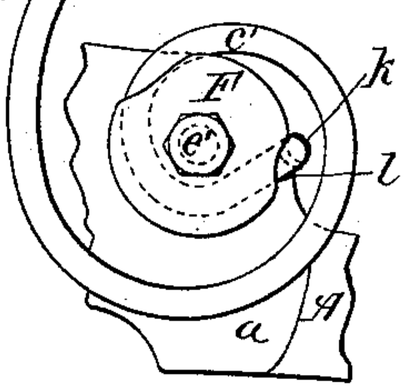


Fig. 8.

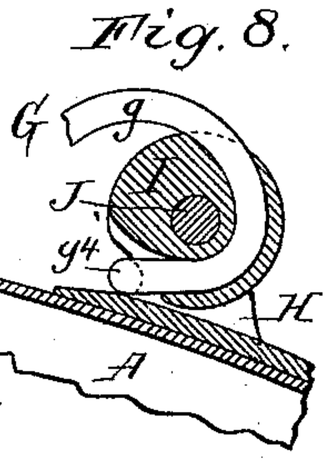
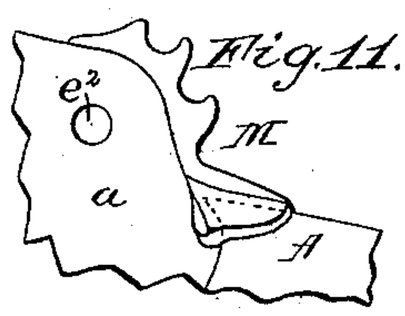


Fig. 11.



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Theo. L. Popp. } Witnesses.

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By Wilhelm & Bonner.
Attorneys.

UNITED STATES PATENT OFFICE.

EMMIT G. LATTA, OF FRIENDSHIP, NEW YORK, ASSIGNOR TO THE POPE MANUFACTURING COMPANY, OF PORTLAND, MAINE.

VELOCIPEDE-SADDLE.

SPECIFICATION forming part of Letters Patent No. 376,322, dated January 10, 1888.

Application filed January 24, 1887. Serial No. 225,246. (No model.)

To all whom it may concern:

Be it known that I, EMMIT G. LATTA, of Friendship, in the county of Allegany and State of New York, have invented new and useful Improvements in Velocipede-Saddles, of which the following is a specification.

My invention relates more particularly to that class of saddles which are provided with a seat of leather or other flexible material suspended from springs at its front and rear ends, and which are generally known as "hammock" or "suspension" saddles.

The object of my invention is to produce a saddle of this kind which is adjustable forwardly and backwardly as well as vertically, and in which the tension of the seat can be regulated at desire.

My invention consists of the novel construction of the springs which support the seat and of the novel devices by which the springs are attached to the seat and to the frame of the machine, as will be hereinafter fully set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of my improved saddle. Fig. 2 is a sectional front elevation of the front spring and connecting parts. Fig. 3 is a sectional side elevation of the neck and front spring. Fig. 4 is a longitudinal section in line *x x*, Fig. 2. Fig. 5 is a sectional front elevation of the rear spring and connecting parts. Fig. 6 is a longitudinal section in line *y y*, Fig. 5. Fig. 7 is a cross-section in line *z z*, Fig. 6. Fig. 8 is a longitudinal section in line *w w*, Fig. 7. Fig. 9 is a side elevation, and Fig. 10 a rear elevation, showing a modified construction of the front spring. Fig. 11 is a fragmentary side elevation of the neck, showing a modified means of securing the front spring thereto. Fig. 12 is a side elevation of the front spring, showing a modified construction of the adjusting device.

Like letters of reference refer to like parts in the several figures.

A represents the backbone or reach, *a* the flat neck formed at the front end thereof, and A′ the steering-head.

B represents the seat of the saddle, constructed of leather or other flexible material.

C represents the front spring, composed of an upper horizontal bar, *c*, to which the front end of the seat B is secured, and two arms or branches, *c′*, by which the spring is attached to the neck *a* of the backbone. The arms *c′* are constructed with coils or convolutions c^2 curved about a horizontal axis and made of gradually-decreasing radius from the saddle toward the frame, the outer coils being far enough apart to clear the steering-head, and the inner coils lying closely against the flat sides of the neck *a* and terminating in short inwardly-projecting ends c^3, which enter a perforation, *d*, in the neck from opposite sides, as represented in Figs. 2 and 3. The neck *a* is provided with a series of perforations, *d d′* d^2 d^3, in either of which the ends c^3 of the front spring may be inserted.

E E represent clamping-plates applied to the outer sides of the inner convolutions of the front spring, and provided each with a spiral groove, *e*, in which the inner convolution of the spring rests, as represented in Fig. 4. These clamping-plates are secured in place by a horizontal bolt, *e′*, which passes through both plates E and an opening, e^2, in the neck *a*, as represented in Fig. 2, and which causes the inner convolution of the spring to be firmly clamped between the plates E and the sides of the neck. The ends c^3 of the spring entering the perforation in the neck prevent the spring and clamping-plates from turning on the bolt *e′*.

e^3 represents an opening formed in the neck *a*, below the opening e^2, for the reception of the bolt *e′*, and in which said bolt is placed when the front end of the saddle is required to be lowered considerably.

In the position of the parts represented in Fig. 1 the front end of the saddle is in its highest forward position. When it is desired to adjust the saddle backwardly and downwardly for safety, the bolt *e′* is loosened, and the ends c^3 of the spring are withdrawn from the opening *d* and placed in one of the lower openings, *d′* d^2, whereby the upper bar, *c*, of the spring is thrown backwardly and downwardly. When it is desired to lower the front end of the saddle without adjusting it backwardly, the bolt *e′* is placed in the lower hole, e^3, and the ends c^3 of the springs are inserted in the up-

per bolt-hole, e^2. In this position of the bolt the front end of the saddle can be adjusted backwardly by placing the ends c^3 of the spring into either of the openings d^2 or d^3. The front end or pommel of the seat B is secured to the bar c of the spring by lapping the leather, or other material of which the seat is constructed, around said bar. In order to secure greater strength and a neater finish, a lining-strip, F, of leather or other flexible material, is interposed between the seat and the bar c of the spring. This lining-strip extends around the bar c and back far enough to receive the rivets f, by which the seat is secured to the spring, as represented in Fig. 3. The edges of the lining-strip are tapered or cut away to a feather-edge, as represented in Figs. 2 and 3, whereby the central portion of the front end of the seat is raised, which renders the saddle more comfortable to the hand and does not prevent the leather from turning freely on the spring, as it would if the spring-bar c, to which the seat is attached, were curved upwardly, in order to raise the center of the pommel.

G represents the rear spring supporting the rear end of the saddle, and composed of two branches, $g\,g$, united at their lower ends and provided at their upper ends with inwardly-projecting horizontal arms g', which are arranged in line with each other and are constructed with overlapping lips, as represented in Fig. 5. The inner ends of the arms g' are provided with right and left screw-threads and are secured together by a right-and-left-threaded screw-sleeve, g^2. The branches g are provided with coils or convolutions g^3, of gradually-increasing radius and extending inwardly from the branches. The coils g^3 are connected at their inner ends by a short transverse portion, g^4.

H is a support to which the rear spring, G, is attached, and which is secured to the upper side of the backbone. This support consists of an upright plate, h, against which the inner coils of the rear spring rest, as represented in Fig. 7, and a base-plate, h', which rests on the backbone and is secured thereto by a clip, h^2.

I I represent clamping-plates applied to the outer sides of the inner coils of the rear spring, G, on opposite sides of the supporting-plate h, and provided on their inner sides with spiral grooves i, in which the inner coils of said spring rest.

J represents the bolt which passes through the clamping-plates I and an opening, h^3, in the supporting-plate h, and which clamps the coils of the spring against the plate h. The face or edge of the latter is curved concentric with the bolt J, or nearly so, and is provided with a series of notches, $j\ j'\ j^2\ j^3$, in either of which the transverse piece g^4 may be placed which connects the inner coils of the rear spring. By securing the rear spring in the lowest notch, j, as represented in Fig. 1, the rear end of the saddle is raised to the highest point. By securing the spring in the higher notch, j', the rear end of the saddle is adjusted rearwardly and downwardly. The notches j^2 j^3 on the rear side of the plate h are arranged at different heights from the notches $j\ j'$, and can be placed in position for use by reversing the support H on the backbone.

The upper ends of the rear spring are curved to correspond with the cantle or rear portion of the saddle, and the leather or other material of which the seat is composed is secured directly to these upper portions of the branches of the rear spring, as represented in Figs. 1, 5, and 6. The overlapping ends of the upper spring-arms, g', hold both arms against turning, and the right-and-left-threaded screw-sleeve g^2 draws these arms tightly against each other, thereby producing a rigid and reliable connection between these arms. The ordinary semicircular plate of iron may, however, be used for connecting the rear end of the saddle to the rear spring, if preferred; but this construction would be heavier.

In the modified construction of the front spring represented in Figs. 9 and 10 the two branches of the front spring are connected by a transverse portion, k, and the upper ends of the branches are provided with horizontal arms k', the spring being similar in these respects to the rear spring, G. The front spring represented in these figures is designed to be applied to machines already in use, and its transverse portion k is seated in a notch, l, formed in the rear side of the neck. The spring is secured in place by the clamping-plates E and the bolt e', as hereinbefore described. This construction does not render the front end of the saddle adjustable.

If it is desired to render the front end of the saddle adjustable on machines already in use, it may be done by forming a series of notches in the rear side of the neck, or securing to the rear side of the neck a plate, M, of the same thickness as the neck and provided with a series of notches at different heights, as represented in Fig. 11. This plate is easily constructed of malleable cast-iron, and is held in place by the spring, the clamping-plates, and the bolt. By making different plates M of the proper form to fit the different styles of bicycles in use adjustable saddles can be furnished for all of these different bicycles.

Each spring is secured to the backbone and saddle in such manner that there is no contact of movable metallic parts, whereby disagreeable noise in the use of the saddle is prevented. The shape of the coils, having their several convolutions arranged in different planes and made of gradually-decreasing radius toward the frame, renders the springs very elastic or yielding at their upper ends. After adjusting the front spring the tension of the seat is adjusted by moving the support of the rear spring backwardly or forwardly on the backbone.

It is obvious that the plate h of the support H may be provided with holes instead of notches, and that the rear spring may be di-

vided at its lower end, like the front spring represented in Fig. 2, instead of at its upper end, as shown in Fig. 5.

In the construction represented in Fig. 12 the front spring is divided at its upper end, and the loop *n*, connecting the lower ends of the coils, is supported in the notched head of a screw, N, which is tapped into the neck, so that the upper ends of the spring can be adjusted forwardly and backwardly by raising and lowering said screw.

I claim as my invention—

1. The combination, with the saddle and frame of a velocipede, of a supporting-spring composed of two coiled branches having their convolutions made of decreasing radius from the saddle toward the frame, substantially as set forth.

2. The combination, with the flexible frameless saddle and the frame of a velocipede, of independent front and rear supporting-springs, each composed of two coiled branches arranged on opposite sides of the frame and attached with their inner ends to the frame and with their outer ends directly to the cantle and pommel of the flexible saddle, substantially as set forth.

3. The combination, with the saddle and the velocipede-frame, of an upright spring-support secured to said frame, a supporting-spring composed of two coiled branches applied to opposite sides of the spring-support, clamping-plates applied to the outer sides of the coiled branches, and a horizontal clamping-bolt, whereby the clamping-plates and coiled-spring branches are secured to the upright support, substantially as set forth.

4. The combination, with the saddle and the velocipede-frame, of an upright spring-support secured to said frame and provided with a series of recesses or spring-seats arranged at different heights, a supporting-spring adapted to be secured in either of said seats, and clamping-plates and a clamping-bolt, whereby the spring is held in engagement with either of said seats, substantially as set forth.

5. The combination, with the saddle and the frame provided with a spring-support having openings for the clamping-bolt at different heights, of a supporting-spring, clamping-plates, and a clamping-bolt which can be placed in either of said openings, thereby raising or lowering the spring, substantially as set forth.

6. The combination, with the saddle and the frame having its neck provided with a bolt-hole, e^2, and a series of openings, $d\ d'\ d^2$, of a front spring, C, composed of two branches having their lower ends inserted in one of said spring seats, clamping-plates E, and a clamping-bolt, e', substantially as set forth.

7. The combination, with the saddle and the frame, of a spring-support, H, secured to the frame and provided with a bolt-hole, h^3, and a series of recesses, $j\ j'$, a rear spring, G, secured with its upper end to the saddle, and clamping-plates and a bolt, whereby the lower end of the spring is secured to the support H, substantially as set forth.

8. The combination, with the saddle and frame, of a rear spring composed of two branches having their upper ends provided with right and left screw-threads, and a similarly-threaded screw-sleeve connecting the upper ends of the spring, substantially as set forth.

9. The combination, with the saddle and frame, of a spring-support, H, reversibly secured to the frame and provided with seats for the spring in its front and rear sides, and a rear spring, G, attached to said spring-support and to the saddle, substantially as set forth.

10. The combination, with the frame, of a front spring having an upper horizontal bar, a seat having its front end lapped around said bar, and a lining-strip constructed with tapering lateral edges interposed between the seat and the bar of the spring, whereby the center of the pommel is raised, substantially as set forth.

Witness my hand this 13th day of December, 1886.

EMMIT G. LATTA.

Witnesses:
FRED H. RICE,
S. E. LATTA.