

(No Model.)

3 Sheets—Sheet 1.

S. B. HILL.

VELOCIPÈDE.

No. 312,634.

Patented Feb. 24, 1885.

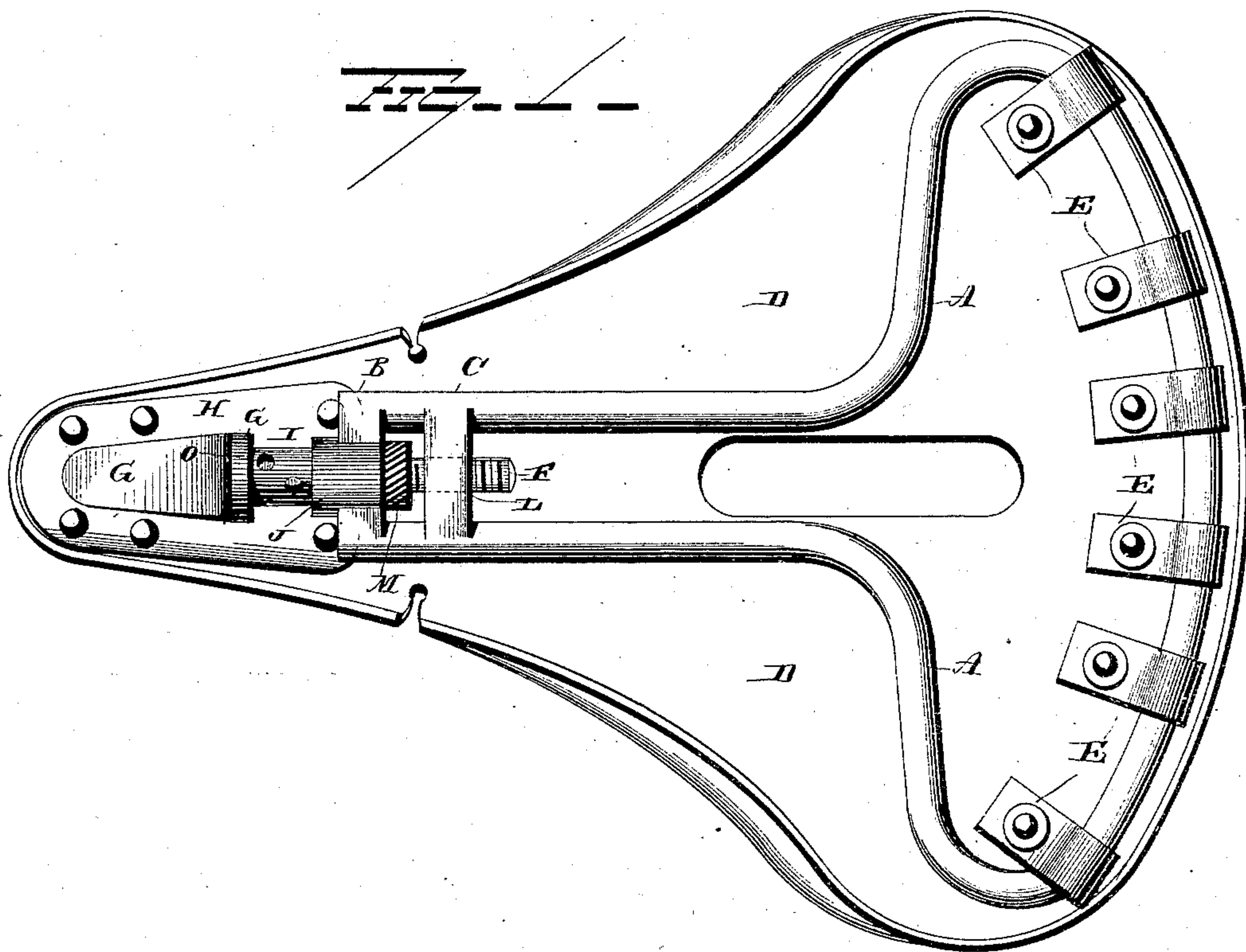
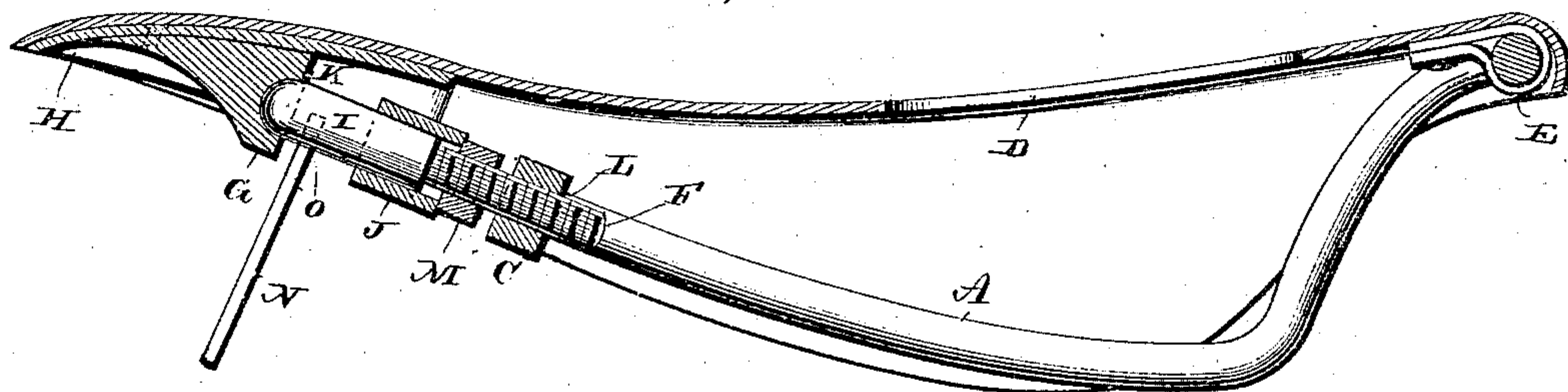


FIG. 1.



WITNESSES

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3 Sheets—Sheet 2.

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FIG. 3.

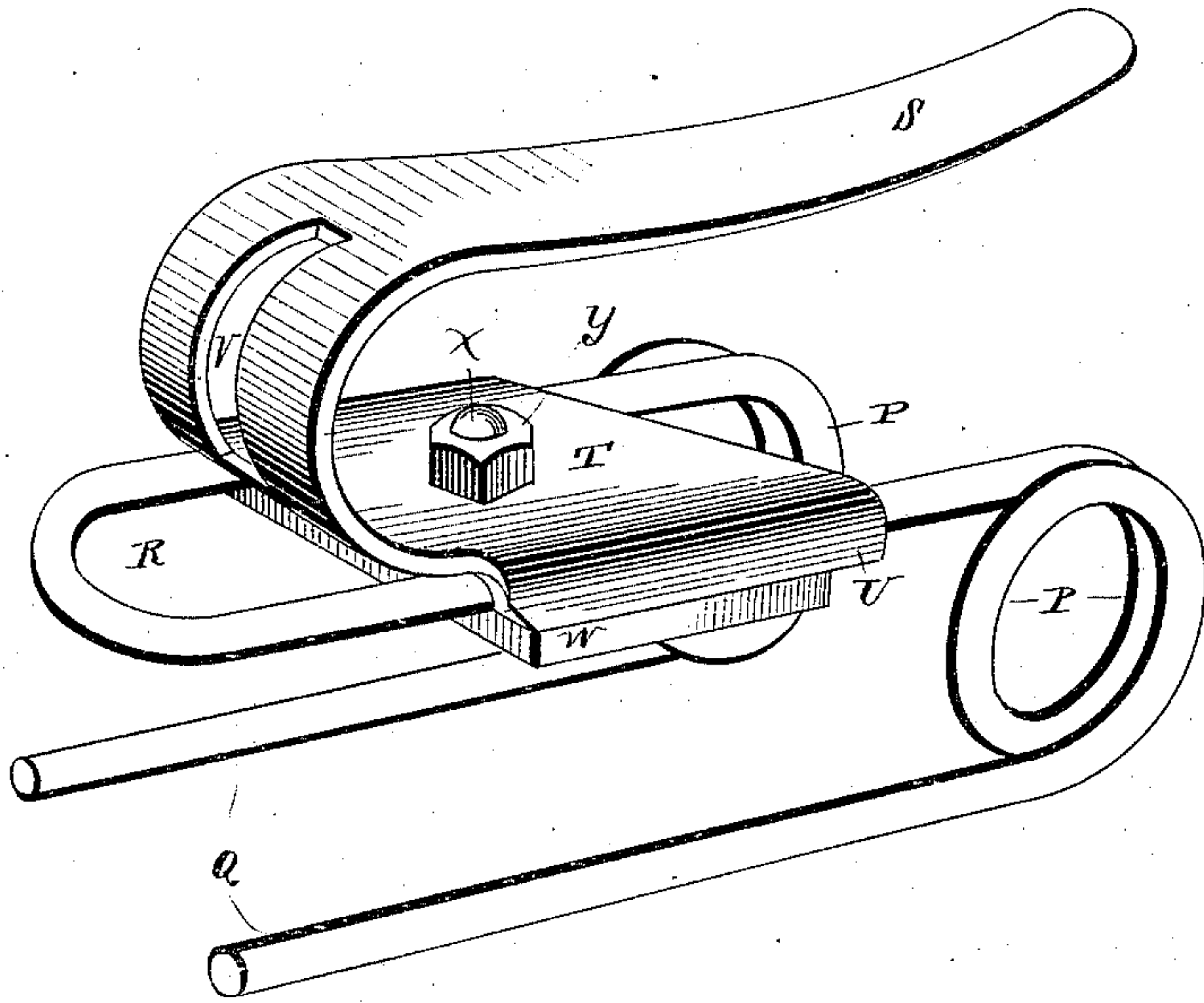


FIG. 4.

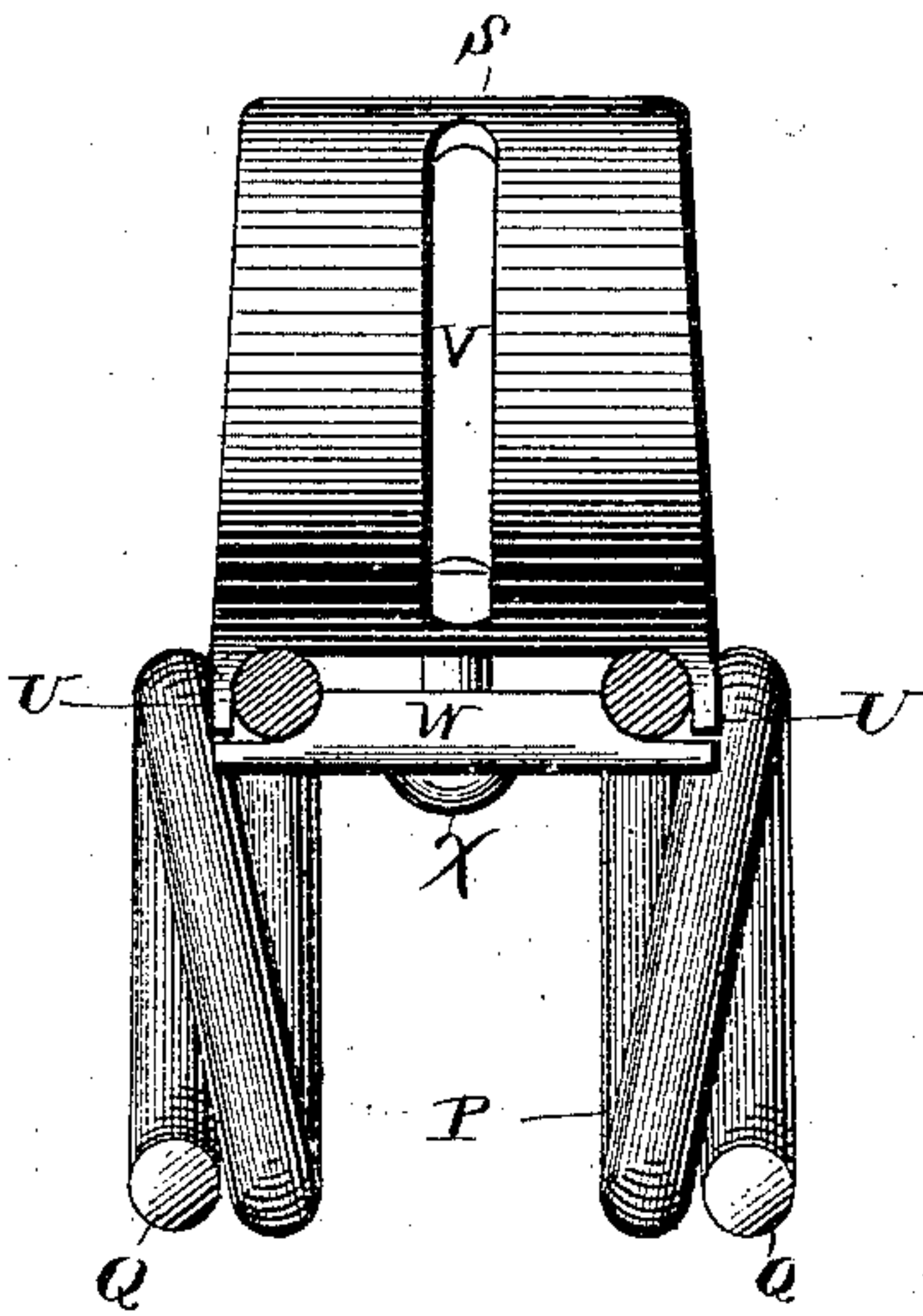
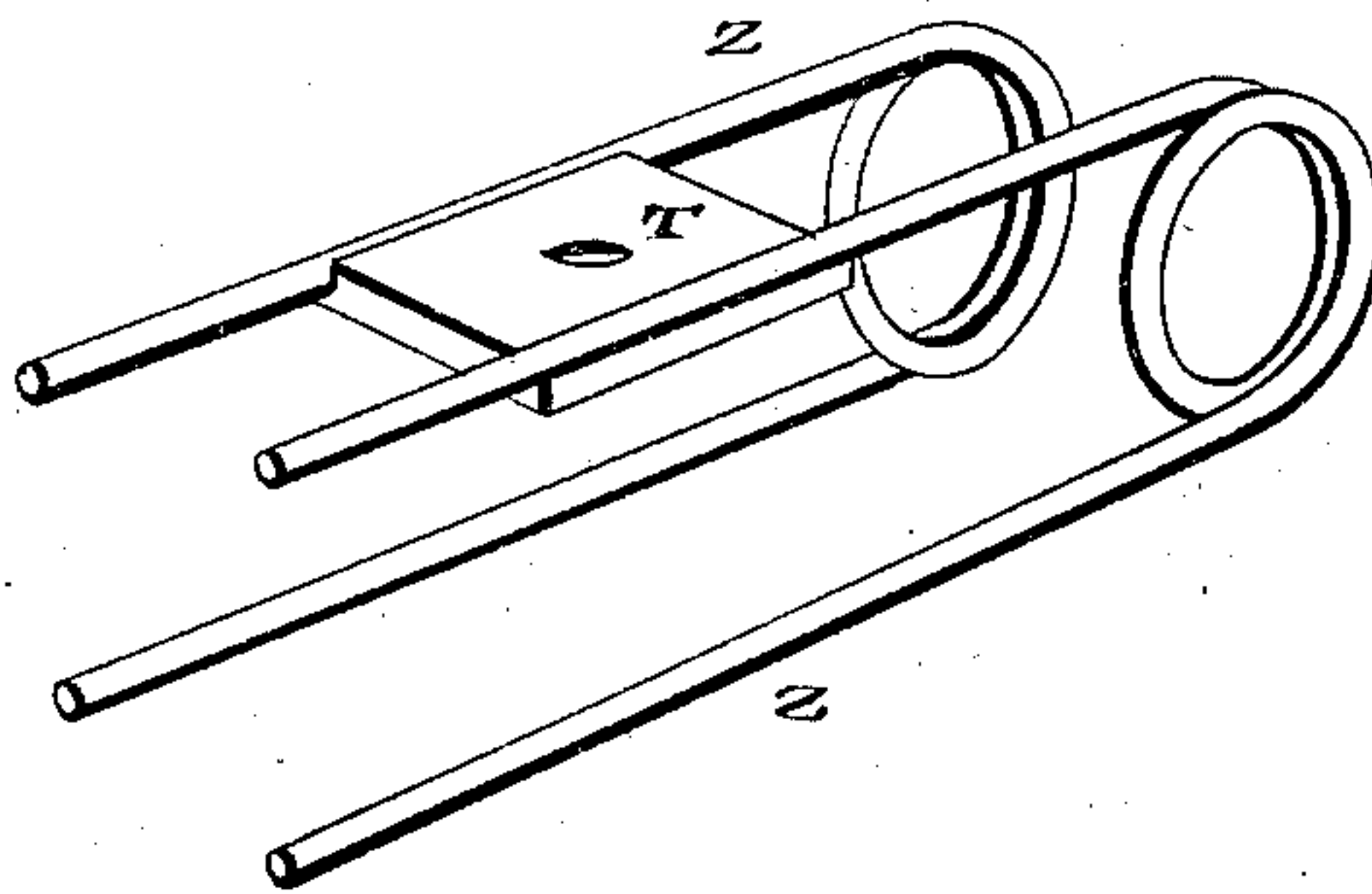


FIG. 5.



WITNESSES

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3 Sheets—Sheet 3.

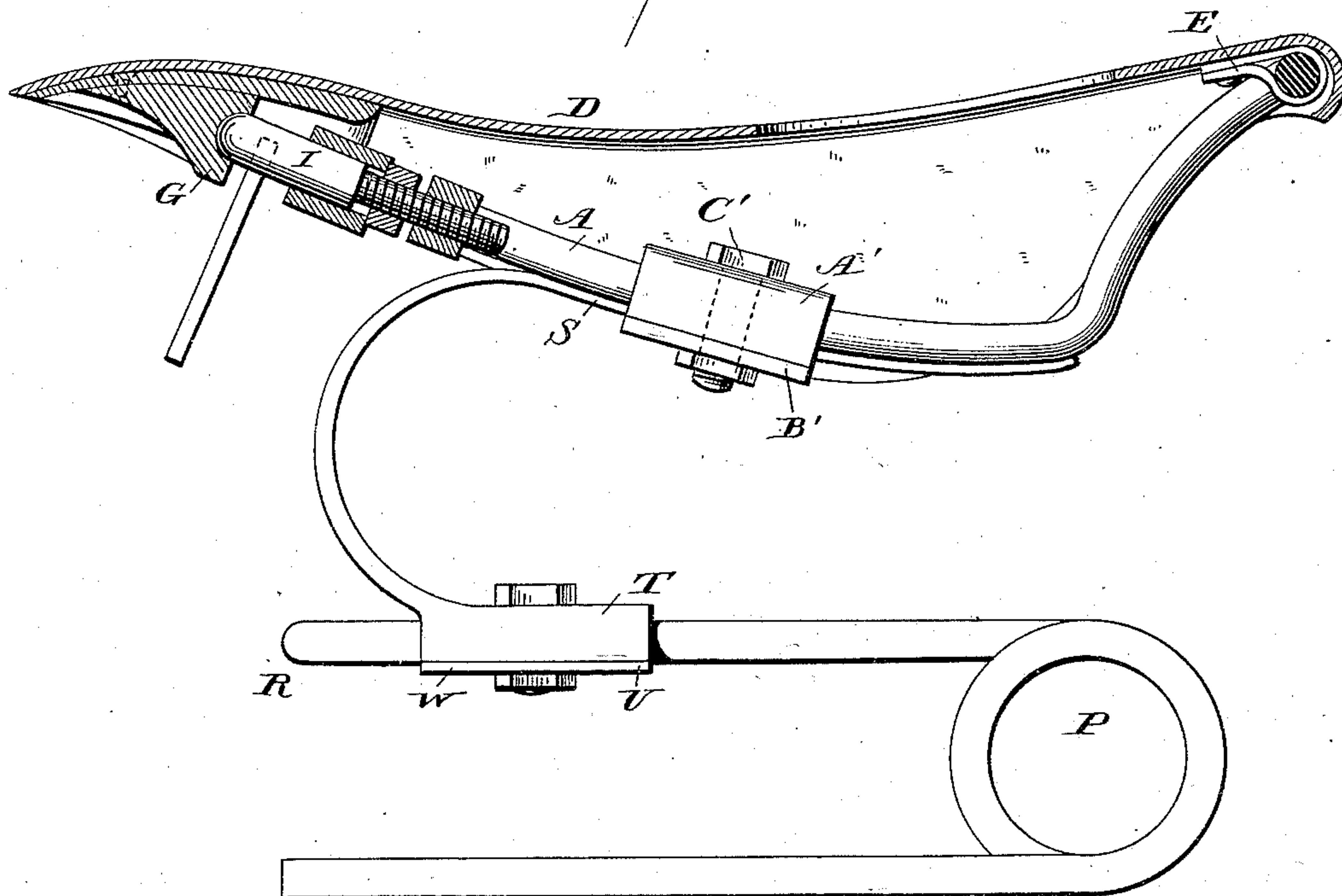
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Fig. 6.



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Inventor:

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UNITED STATES PATENT OFFICE.

SYLVESTER B. HILL, OF CHICOPEE, MASSACHUSETTS, ASSIGNOR TO THE
OVERMAN WHEEL COMPANY, OF SAME PLACE.

VELOCIPEDÉ.

SPECIFICATION forming part of Letters Patent No. 312,634, dated February 24, 1885.

Application filed February 23, 1884. (No model.)

To all whom it may concern:

Be it known that I, SYLVESTER B. HILL, residing at Chicopee, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Tricycles; and I do declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improvement in velocipedes, the object being to provide vehicles of this class with improved saddles of the suspension type, and with improved seat or saddle springs.

With these objects in view my invention consists in a suspension-saddle having the forward ends of its frame and covering pivotally connected beneath the latter.

My invention further consists in a suspension-saddle having a wire frame.

My invention further consists in a seat or saddle spring composed of two or more parts adapted to be adjusted with respect to each other for changing its pliancy.

My invention further consists in certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a reverse plan view of a saddle embodying my invention. Fig. 2 is a view thereof in vertical longitudinal section. Fig. 3 is a view in perspective of my improved seat saddle-spring. Fig. 4 is a view thereof in end elevation, with the loop of the lower part of the spring removed. Fig. 5 is a detail view of one of the modified forms which the spring may assume, and Fig. 6 is a view in side elevation of the saddle and spring as combined for use.

The first part of the invention relates to a pivotal and adjustable connection between the frame and covering of a suspension-saddle, the object being to enable the tension of the covering to be controlled at pleasure, and to adapt the saddle to respond to the movements of the rider as he shifts in it or sways from side to side.

With these ends in view the invention consists in a frame, A, made of a single piece of heavy prepared steel wire bent to essentially the form or figure shown, the ends of the wire

being united by two bearings, B and C, and of these hereafter. By virtue of its construction and peculiar shape the frame is rendered very elastic, and ample opportunity is given for the free circulation of air under the covering, and for a wide range of tensional adjustment in the same. The saddle is mounted upon the spring by means of a clamp, which embraces the neck of the frame, or, in other words, that portion thereof where the ends of the wire are parallel. The covering D of the saddle is connected with the curved portion of the frame by means of short straps E, secured to the covering by rivets. The forward end of the covering is connected with the frame by means of a set-screw, F, mounted in the bearings B and C aforesaid, and having pivotal or rocking bearing in a shoulder, G, depending from a plate, H, riveted to under face of the forward end of the covering. The said screw F is provided with a cylindrical head, I, fitting in a sleeve, J, located in the bearing B, and having its outer end rounded and fitting in a shallow socket, K, formed in the shoulder G aforesaid. The threaded end of the screw fits in a threaded opening, L, formed in the bearing C, as shown. A nut, M, having a milled periphery, and interposed between the two bearings B and C, is employed for turning the screw out, and thus increasing the tension of the covering. In this capacity the nut is turned toward the head of the screw until it meets the end of the thread and locks therewith. After this the nut and screw are turned together until the desired tension is obtained. For getting a high tension in the covering, however, a pin, N, is engaged with holes O, formed in the head of the screw. This pin is also employed for turning the screw in and relaxing the covering. By means of the screw and the depth of the frame a wide range of adjustment is obtained, whereby the covering may be suited in tension to the peculiar needs of the rider under a variety of circumstances. By means, also, of the pivotal or rocking connection between the forward ends of the frame and covering, the saddle is made responsive to the movements of the rider as he shifts or sways from side to side. The riding qualities of the saddle are

also improved by the elasticity of the frame itself and the open circulation of air under the covering which it permits.

The second part of this invention relates to an improvement in that class of saddle or seat springs which are shaped in general contour like the letter S, the object of the invention being to adapt this class of springs to be adjusted for pliancy to suit riders varying in weight.

With this end in view the invention consists in a spring made in two or more parts, adapted to be adjusted with respect to each other for varying its pliancy.

As shown in Figs. 3 and 4 of the drawings, the spring consists of a lower and an upper part, respectively, constructed so as to form when secured together the general outline of the letter S. The lower part of the spring is made of a single piece of heavy prepared steel wire, bent into shape and preferably coiled, as at P, to increase its power. The ends Q of the said part of the spring are secured in suitable bearings, by which the spring is mounted upon the vehicle, while the loop R of the said part supports the upper part of the spring. The said upper part of the spring is made of a single piece of flat spring metal, preferably brought into shape by forging. The upper arm, S, of this part of the spring supports the saddle, while its lower arm, T, rests upon the loop R aforesaid, which is embraced by depending flanges U, formed integral with the said arm T, and preventing the upper part of the spring from being laterally displaced upon the loop. As herein shown, the upper part of the spring is slotted, as at V, for the purpose of increasing its elasticity, and this may or may not be done, according to circumstances. The two parts of the spring may be secured together in a variety of ways. As shown in the drawings, a plate, W, and a bolt, X, are employed for the purpose. The plate is grooved to fit the loop of the lower part of the spring, and supported under the same by the bolt X, which extends through the arm T of the upper part of the spring. By screwing down a nut, Y, fitted upon the projecting upper end of the bolt, the plate is drawn up and the loop clamped between it and the arm T aforesaid, thus rigidly securing the two parts of the spring together. By unscrewing the nut the upper part of the spring may be adjusted forward and back upon the loop with the effect of changing the pliancy and hence the power of the spring. On the one hand, by moving the upper part of the spring away from the end of the loop, the leverage of the spring will be shortened and its power increased, whereby it is adapted to riders of heavy weight. On the other hand, by moving the said part of the spring toward the end of the loop, the leverage of the spring will be lengthened and its flexibility increased, whereby it is adapted to riders of light weight. In this connection it may be well to state with

reference to springs incapable of being adjusted for pliancy that when the rider is too light for the spring it will not respond to his weight and ride comfortably, while if he be too heavy it will not only not cradle properly, but will be strained, and, if not unfitted for use, greatly impaired. For these reasons springs which are not adjustable for pliancy are practically limited in use to riders of approximately the same weight. By its adaptation to be adjusted to the weight of each rider my improved spring insures to him the greatest comfort with the least strain upon itself. Furthermore, the adaptation for adjustment makes the spring available for riders varying considerably in weight.

While the spring hereinabove described and shown in Figs. 3 and 4 of the drawings is made in two parts, it may be made in three or more parts. A detail view of a spring made in three parts is shown in Fig. 5 of the drawings, in which the lower part of the spring is made in two parts, Z, made of heavy wire bent and coiled, as shown. The upper part of the spring has been described as being made of flat spring metal. This is the preferred construction; but, if desired, it may be made of wire and in one or more parts. If desired, also, the spring may be constructed with the wire part uppermost and the flat metal part beneath. Furthermore, the described plate and bolt for securing the parts together may give way to other devices, or such devices may be entirely dispensed with and the parts adapted to sleeve upon one another. I would also have it understood that the improved spring is applicable to bicycles as well as to tricycles.

In Fig. 6 of the drawings the saddle and spring are shown as combined for use. As shown, they are coupled by plates A' and B' and a bolt, C'; but any other suitable coupling device may be employed.

In view of the modifications herein suggested for the saddle and spring, I would have it understood that I do not limit myself to the exact construction and arrangement of parts shown and described, but hold myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of my invention.

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

1. A suspension-saddle having the forward ends of its frame and covering pivotally connected beneath the latter, substantially as set forth.

2. A suspension-saddle having the forward ends of its frame and covering pivotally and adjustably connected beneath the latter, substantially as set forth.

3. A suspension-saddle having the forward ends of its frame and covering pivotally connected beneath the latter by a set-screw mounted in the frame, and provided with a

rounded head having bearing in a shoulder depending from a plate secured to the under face of the covering and located forward of the screw, substantially as set forth.

5 4. A suspension-saddle having the forward ends of its frame and covering connected by a set-screw provided with a nut for locking with and turning it, substantially as set forth.

10 5. A suspension-saddle having a frame made of wire, and shaped substantially as shown and described, substantially as set forth.

15 6. A suspension-saddle having a frame made of a single length of wire bent substantially as shown, and having its ends united by two bearings, in which a set-screw connecting with the forward portion of the covering of the saddle is located, substantially as set forth.

20 7. A suspension-saddle having a wire frame, to which the rear portion of the covering is attached by straps encircling the wire and riveted to the covering, substantially as set forth.

25 8. A seat-spring having substantially the form herein shown and described, and composed of two or more parts arranged to be adjusted upon each other for changing the pliancy of the spring, substantially as set forth.

30 9. A seat-spring having substantially the form herein shown and described, and made in two parts arranged to be adjusted upon each other for varying the pliancy of the spring, one of the said parts being made of wire and the other of flat spring metal, substantially as set forth.

35 10. A seat-spring having substantially the form herein shown and described, and made in two parts, one part being mounted upon and embracing the other and arranged to be adjusted upon it for varying the pliancy of the spring, substantially as set forth.

40 11. A seat-spring having substantially the form herein shown and described, and made

in two parts, arranged to be adjusted with respect to each other for varying the pliancy of the spring, one of the said parts being made 45 of wire and the other of flat spring metal, and the latter being provided with flanges to embrace the part made of wire, substantially as set forth.

12. A seat-spring having substantially the 50 form herein shown and described, and composed of two or more parts arranged to be adjusted upon each other for varying the pliancy of the spring, one or more parts of the spring being made of wire and coiled, as 55 shown, substantially as set forth.

13. A seat-spring having substantially the form herein shown and described, and made in two or more parts arranged to be adjusted with respect to each other for varying the 60 pliancy of the spring, and means for securing the said parts together, substantially as set forth.

14. A seat-spring having substantially the form herein shown and described, and com- 65 posed of two or more parts arranged to be adjusted with respect to each other for varying the pliancy of the spring, and the described plate and bolt for securing the parts together, substantially as set forth. 70

15. A seat-spring having substantially the form herein shown and described, and composed of an upper and a lower part, respectively, made, as shown, of wire and of flat spring metal, and the latter being adjustable 75 upon the former for varying the pliancy of the spring, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

SYLVESTER B. HILL.

Witnesses:

GEO. D. SEYMOUR,
LUTHER WHITE.