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D. S. TROXEL.

SADDLE SPRING.

APPLICATION FILED FEB. 6, 1908.

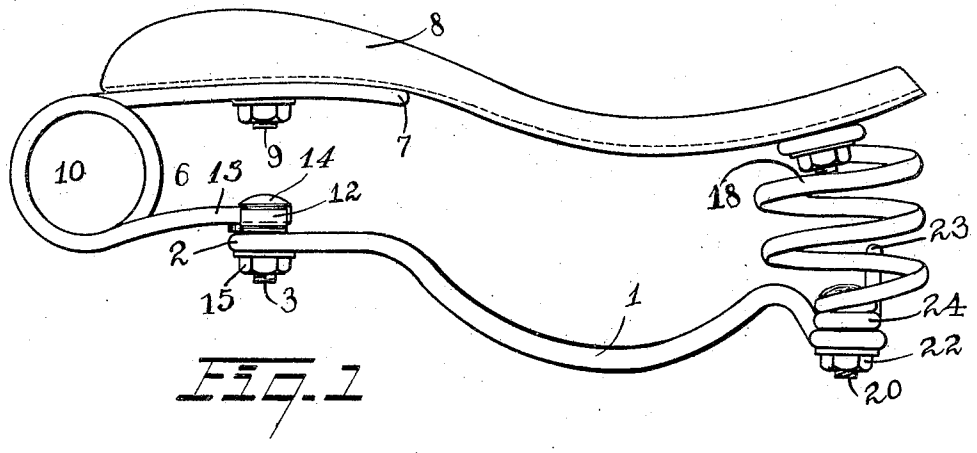


Fig. 1

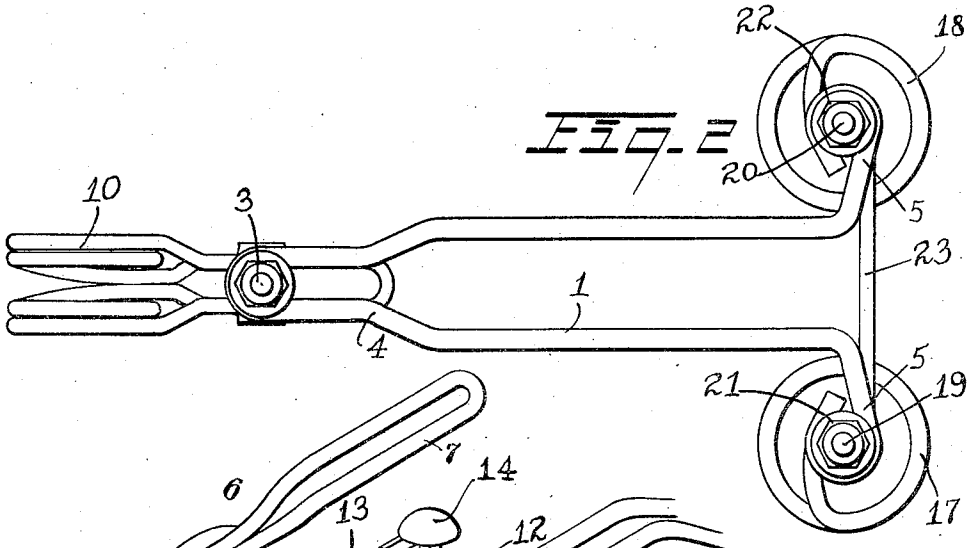


Fig. 2

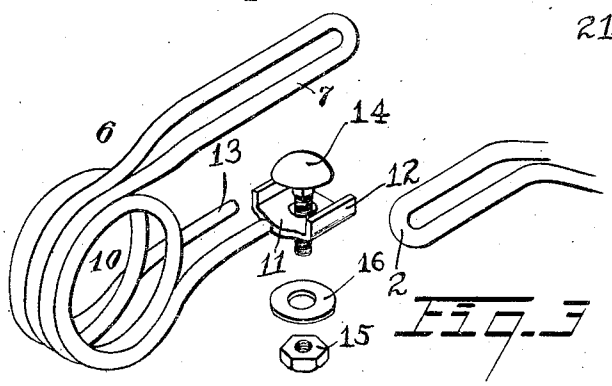


Fig. 3

Witnesses:

Brennand B. West.

Nathan F. Fretter

Inventor.

David S. Troxel

By Bates, Fouts & Hull,

Attys

UNITED STATES PATENT OFFICE.

DAVID S. TROXEL, OF ELYRIA, OHIO.

SADDLE-SPRING.

No. 893,401. Specification of Letters Patent. Patented July 14, 1908.

Application filed February 6, 1908. Serial No. 414,556.

To all whom it may concern:

Be it known that I, DAVID S. TROXEL, a citizen of the United States, residing at Elyria, in the county of Lorain and State of Ohio, have invented a certain new and useful Improvement in Saddle-Springs, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention relates to bicycle saddles, and more particularly to the spring structure interposed between the saddle base and the seat post.

While applicable to all general forms of saddles it is particularly useful in connection with saddles having rigid bases.

For convenience of description, I will hereafter employ the term "saddle spring" to denote generally the complete yielding construction interposed between the saddle base and the seat post, such saddle spring being made up of a plurality of members, each member being a spring.

The objects of my invention are to provide a construction of saddle spring which will combine strength with resiliency and ease of riding and which may be conveniently adjusted to fit different lengths and styles of saddles.

Generally speaking, the invention consists in certain peculiarities of construction and combinations of elements to be hereinafter described and subsequently claimed with reference to the accompanying drawings, wherein

Figure 1 represents a side elevation of a saddle having my invention applied thereto, the skirt or flap of the saddle being omitted for clearness of illustration; Fig. 2 represents a bottom plan view of the saddle spring; and Fig. 3 represents an enlarged detail in perspective, showing the construction of the front spring member and illustrating the manner in which the same is connected to the intermediate or reach spring member.

Describing the parts by reference characters, 1 denotes the base or reach spring member, the same comprising a round steel wire bent upon itself at 2 and having its branches extending rearwardly and symmetrically from such bend. The point 2 is the front end of the spring member 1, and for some distance from this point the two branches extend in substantially horizontal direction and are spaced sufficiently far apart to receive a bolt 3 therebetween. From point 4 each branch of spring 1 extends downwardly and outwardly and are then curved in a vertical plane, as shown in Fig. 1, the two curved branches being spaced apart a sufficient distance to receive the saddle-post clamp. The rear end of each branch of spring 1 is bent outwardly at 5 and formed into a loop for the reception of a bolt, to which reference will be made hereinafter.

6 denotes the front spring member, the same comprising a single round steel wire bent upon itself at 7 with its branches extending parallel and in close proximity to each other and in a general horizontal direction for a considerable distance, to form a support for the front of the saddle 8 and to receive the bolt 9 by which the front of the saddle is secured thereto. Both side members of the front spring 6 are coiled to form a horizontally extending spiral at 10, and from the lower side of each coil 10, the wire extends rearwardly substantially parallel with the upper portion of the spring.

11 denotes a clamp, which is adapted to rest upon the front of reach spring 1 and is provided with a central aperture for the reception of the bolt 3 and with a pair of upwardly extending lugs 12 at opposite sides thereof. Each end 13 of the front spring is inserted into this clamp between the bolt 3 and one of the lugs 12, and the two spring members 1 and 6 are securely clamped together by means of the clamp, the enlarged head 14 on bolt 3, and nut 15 and washer 16.

17 and 18 denote a pair of vertically arranged spiral springs, each extending between the subjacent end of one of the branches of spring 1 and the rear of the saddle and being secured to the saddle by means of bolts 19 and 20, respectively. These bolts project from the base of the saddle through loops formed in the upper ends of the spirals and said loops are secured in place by means of nuts 21 and 22, respectively.

23 denotes a cross brace, which is also made of a single round steel wire having at each end an eye bent therefrom and being curved upwardly intermediate between such ends, as indicated in Fig. 1. In assembling, the eyes 24 are applied to the bolts which connect the lower ends of spiral springs 18 to the ends of the members of spring 1, preferably inserting the eyes 24 between the eyes formed on the end of the other spring members. Each bolt 19 and 20 is provided with a nut and a washer by means of which the ends of spring mem-

bers 1, 17, 18 and 23 may be firmly connected together. Brace 23 prevents the rear ends of spring 1 from spreading, thereby maintaining springs 17 and 18 in proper relation to the saddle and maintaining the curved portions of spring 1 in proper relation to the seat-post clamp.

By the construction above described, it will be apparent that I have produced a very resilient form of saddle spring and one which may be readily adjusted to apply the spring to different lengths and makes of saddles. The location of the horizontal coils 10 at the extreme front of the saddle and the attachment of the base of the saddle to the front spring at a point considerably distant from said coil secures great flexibility and ease of riding at this point. Similar ease of riding is secured for the rear of the saddle by means of the vertical springs 17 and 18, the front spring readily yielding to accommodate any movement of the rear of the saddle.

In order to adjust the spring for different size saddles, it is only necessary to unscrew the nuts on bolts 3 and 9 and to move spring 10 inwardly or outwardly, as occasion may require, such action being readily permitted by the fact that the upper and lower branches of the front spring are substantially parallel with each other and with the front portion of spring 1. The construction is moreover extremely durable, and the brace 23 effectually resists any tendency of the ends of spring 1 to spread apart and of the spiral springs 17 and 18 to twist or otherwise get out of operative relation to the saddle and their base supports.

Having described my invention, I claim:

1. In a saddle spring, the combination of a base spring member having its forward end formed as a loop, a front spring member adjustably secured to the front end of the base spring member, and a pair of rear spring members supported by the rear ends of the base spring member, substantially as specified.

2. In a saddle spring, the combination of a base spring member composed of a wire bent upon itself to form a front loop and having its rear ends projecting outwardly in opposite directions and each provided with a loop at its end, a pair of vertically arranged spiral coils each having at each end a loop, a bolt extending through the loop on the lower end of each of said coils and the loop on the subjacent end of the base spring, a saddle, and bolts projecting downwardly from the rear of said saddle through the loops of the upper ends of the vertical coil springs, and nuts for said bolts, substantially as specified.

3. In a saddle spring, the combination of a base spring member comprising a round wire bent upon itself to form a loop and having said loop projecting forwardly, said member having its rear ends each provided with a loop, a pair of vertical coil springs, each having at its opposite ends a loop, a cross brace having its opposite ends provided with loops, bolts extending through the loops on the lower ends of the vertical springs and through the loops in the ends of the base spring branches and cross brace, and nuts for said bolts, substantially as specified.

4. In a saddle spring comprising a base spring member formed of a round wire bent upon itself to form a front loop and having its rear ends formed into supports, a front spring member having an upper and a lower branch, a clamp adjustably securing the lower branch of the latter member to the front end of the base member, and a pair of vertically extending spiral springs secured to the supports on the rear end of the spring member, substantially as specified.

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

DAVID S. TROXEL.

Witnesses:
J. B. HULL,
H. MILLER.