D. S. TROXEL.

SADDLE.

APPLICATION FILED FEB. 19, 1914.

1,118,600. **Patented Nov. 24, 1914.**

2 SHEETS—SHEET 1.

Fig. 1.

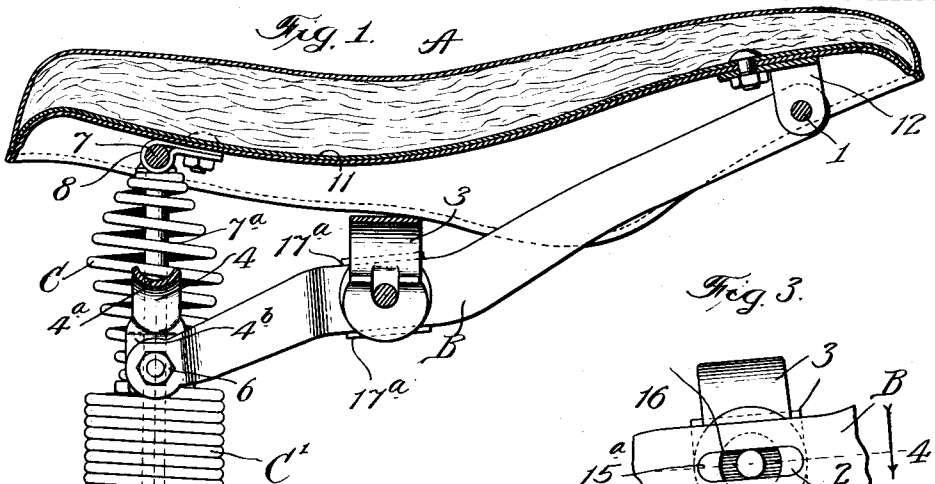


Fig. 3.

Fig. 2.

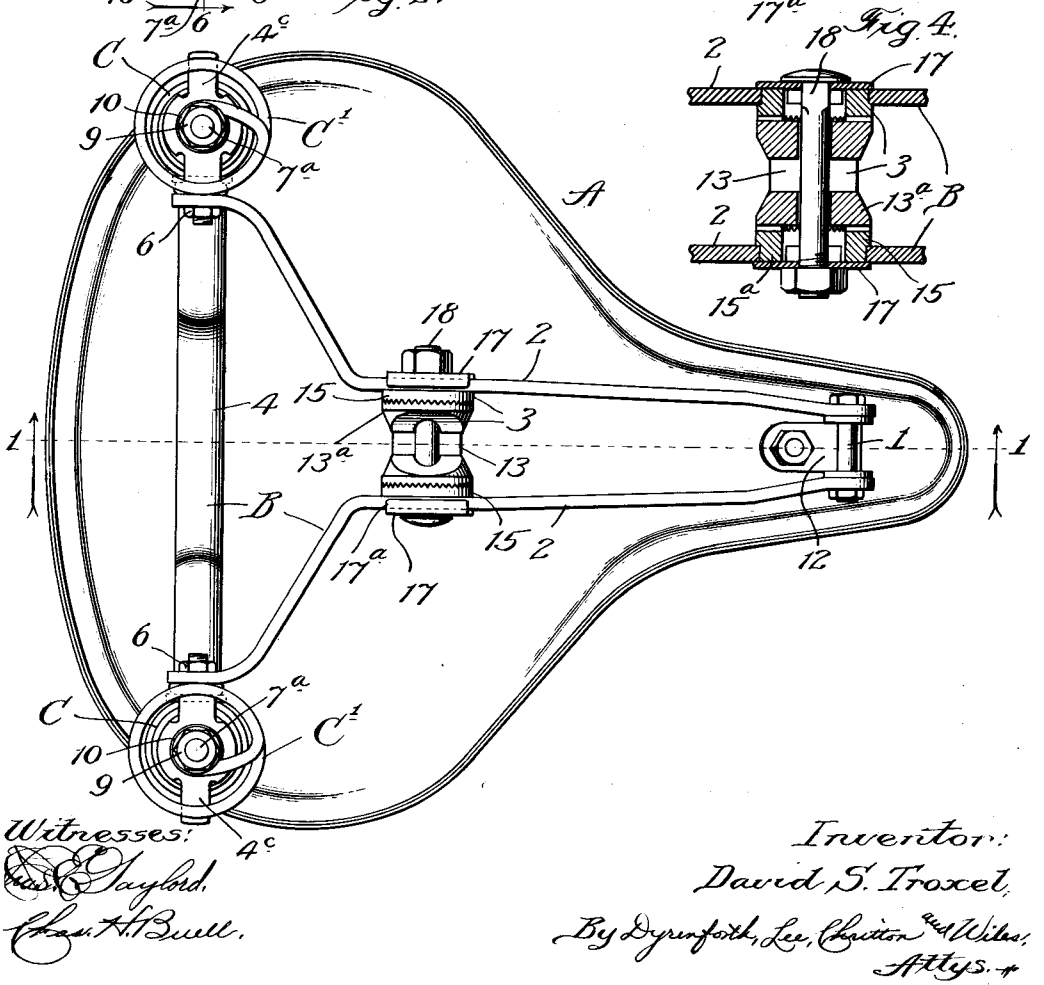


Fig. 4.

Witnesses:
Chas. E. Gaylord.
Chas. H. Buell.

Inventor:
David S. Troxel,
By Dyrenforth, Lee, Chritton and Wiles,
Attys.

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2 SHEETS—SHEET 2.

Fig. 5.

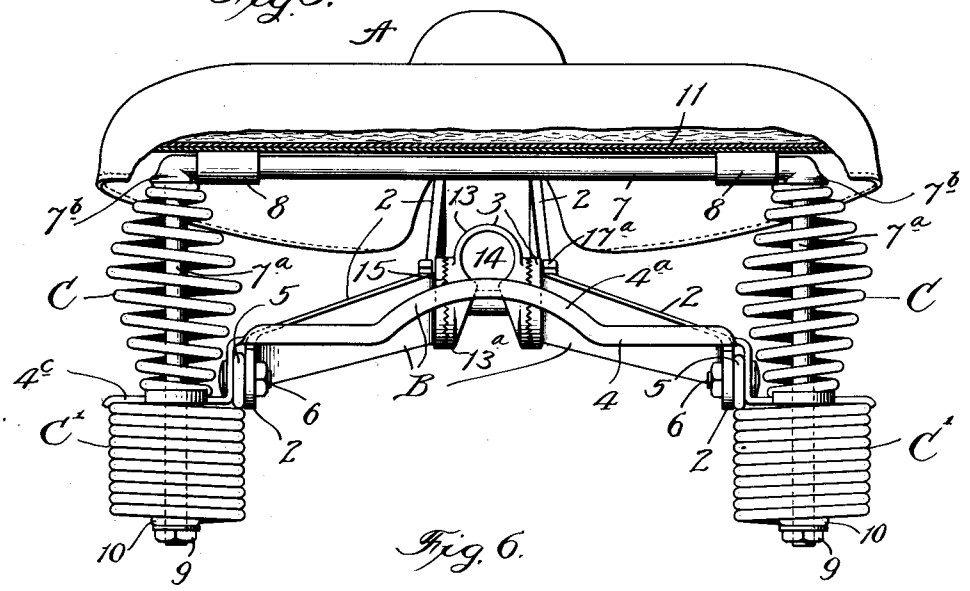


Fig. 6.

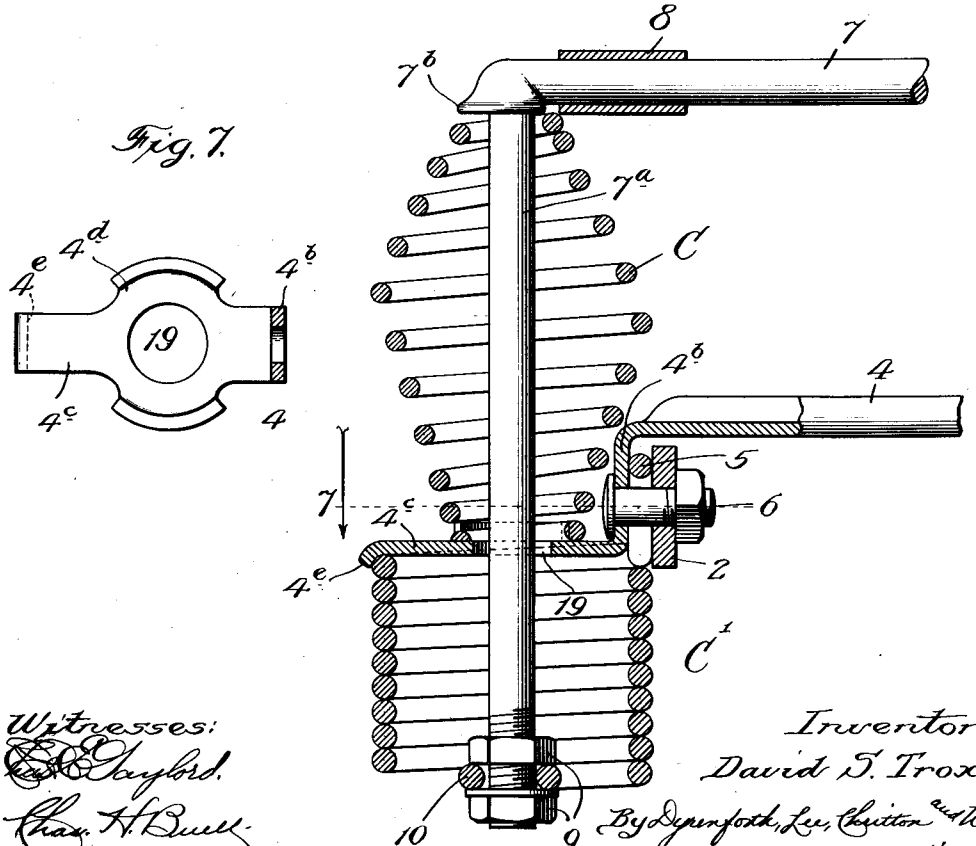


Fig. 7.

Witnesses:
E. C. Gaylord.
Chas. H. Bull.

Inventor:
David S. Troxel,
By Dyer, Tyler, Bradford & Wiles
Attys.

UNITED STATES PATENT OFFICE.

DAVID S. TROXEL, OF ELYRIA, OHIO.

SADDLE.

1,118,600. Specification of Letters Patent. Patented Nov. 24, 1914.

Application filed February 19, 1914. Serial No. 819,858.

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 new and useful Improvement in Saddles, of which the following is a specification.

This invention relates particularly to saddles adapted for use in connection with bicycles, motor-cycles, etc.

It constitutes an improvement of the saddle described and claimed in Letters Patent No. 1,022,447, granted to David S. Troxel April 9, 1912.

The primary object is to simplify and improve the construction, and provide a saddle having the desirable characteristics of the saddle described in the aforesaid patent, but possessing greater strength and durability.

The invention is illustrated in its preferred embodiment in the accompanying drawings, in which—

Figure 1 represents a longitudinal sectional view of the improved saddle, the section being taken as indicated at line 1 of Fig. 2; Fig. 2, a bottom plan view of the saddle; Fig. 3, a broken elevational view showing a detail of the clamping device employed for securing the saddle to a post; Fig. 4, a broken sectional view taken as indicated at line 4 of Fig. 3; Fig. 5, a rear elevational view, the seat-portion of the saddle being shown brokenly; Fig. 6, an enlarged broken vertical section showing a detail of the manner of connecting the springs; and Fig. 7, a sectional view taken as indicated at line 7 of Fig. 6.

In the construction illustrated, A represents the seat or body-portion of the saddle, which may be of any desired form; B, a supporting frame, the front portion of which is preferably connected by a pivot 1 with the front portion of the seat; and C, C′ compression and tension springs, respectively, interposed between the rear portion of the supporting frame and the seat.

The frame B comprises a pair of reach-members 2 supported on a post-clamping device 3, and a yoke 4 connected with the widely separated rear ends of the members 2. The cross-yoke 4 is bowed upwardly centrally for clearing, as indicated at 4^a, and has its end-portions bent downwardly, as indicated at 4^b, the downwardly bent portions being provided with extensions 4^c, the horizontal extensions 4^c being provided with socket-portions 4^d which receive the lower ends of the compression springs C. The extreme ends of the portions 4^c are bent downwardly, as indicated at 4^e, to embrace the upper portions of the tension springs C′.

As indicated, the compression springs C are preferably composed of open helical coils which gradually increase in size as the central portion of the spring is approached from either end; and the lower ends of these springs rest upon the extensions 4^c. The springs C′ are preferably composed of close-wound convolutions of uniform diameter, and their upper ends are provided with eyes 5 which are firmly secured between the rear ends of the members 2 and the vertical portions 4^e of the yoke 4, the connection being made by means of small bolts 6.

A U-shaped rod has its horizontal web-portion 7 connected, by pivot-clips 8 with the rear portion of the seat, and said yoke has downwardly-extending stems 7^a which pass through the coils and are provided at their lower ends with nuts 9 between which are secured the eyes 10 with which the lower ends of the tension springs C′ are provided. The last-mentioned yoke is provided at the upper ends of the stems 7^a with shoulders 7^b which bear upon the upper ends of the compression springs C.

As has been indicated, the seat A may be of any suitable form and construction. As shown, it is provided within its lower portion with a sheet-metal plate 11 which serves as a cantle, and the clips 8 which connect the member 7, and the clip 12 which is connected with the pivot 1 are secured to said plate 11. The yoke 4 may comprise a suitable stamping of concavo-convex form, as best indicated in Fig. 1, the extremities of the member being suitably shaped to provide the sockets 4^d.

It will be understood from the foregoing that the frame B, which is supported by the clamping device 3, serves as a support for the lower ends of the compression springs C and for the upper ends of the tension springs C′. When weight is placed on the seat, the shoulders 7^b serve to compress the springs C, while the lower ends of the members 7^a serve to force the lower ends of the tension springs C′ downwardly. Thus, both

the compression and tension springs serve to resist downward movement of the saddle-seat.

The clamping device 3 comprises a yoke-shaped member 13 provided with a door 14 which receives the horizontal portion of the supporting post, the member 13 being provided with serrated disk-portions 13^a; serrated disks or washers 15 confined between the members 2 and the disk-portions 13^a, the members 15 being provided with lugs 15^a received by slots 16 with which the members 2 are provided; rectangular bolts or washers 17 embracing the outer surfaces of the members 2 and provided with flanges 17^a which engage the upper and lower edges of the members 2; a nut-equipped bolt 18 passing through and securely connecting the parts, as will be clearly understood from Figs. 2 and 4. The yoke or clamping member 13 may comprise a malleable casting possessing sufficient springiness to enable the member to be clamped on the post.

It will be understood from Fig. 6 that the cross-yoke 4 extends over the members 2 and has depending vertical portions 4^b so disposed with relation to the members 2 that the eyes 5 of the tension springs C′ can be clamped between the portions 4^b and the members 2; also, that the cross-member 4 has its extremities provided with the horizontal members shown in Fig. 7, shaped to afford sockets for the lower ends of the compression springs C, while the extreme end portions of the members 4^c embrace the upper ends of the tension springs C′, as indicated at 4^e. The members 4^c are provided with enlarged perforations 19 through which the bolts or stems 7^a of the yoke 7 freely extend. The construction is simple, strong and very durable. The metal base-plate or cantle 11 of the seat affords a strong member to which the clips 8 and 12 are securely joined.

The construction described is simple, strong and durable throughout, and may be manufactured at a reasonable cost.

The seat A may be of any suitable form. As is well understood, the seat portion of the device is sometimes given a different form or contour from that illustrated, and is used, according to desire, to accommodate a passenger or to serve as a package-carrier.

The foregoing detailed description has been given for clearness of understanding only, and no unnecessary limitation should be understood therefrom.

What I regard as new and desire to secure by Letters Patent is—

1. In a device of the character set forth, the combination with a seat, of a supporting frame having its rear portion equipped with lateral extensions, compression springs supported on said extensions, tension springs disposed below said extensions connected at their upper ends with said frame, and stems depending from the rear portion of the seat through said springs and having their lower ends connected with the lower ends of the tension springs.

2. In a device of the character set forth, the combination with a seat, of a supporting frame provided in its rear portion with lateral extensions equipped with spring-sockets and perforations extending through said sockets, stems depending from the rear portion of the seat and extending through said perforations, compression springs supported on said extensions and encircling the upper portions of said stems, tension springs encircling the lower portion of said stems and having their upper ends secured to said supporting frame, and means connecting the lower ends of the tension springs to the lower ends of said stems.

3. In a device of the character set forth, the combination with a seat, of a supporting frame comprising reach-members connected at their front ends with the front portion of the seat and having widely separated rear ends, and a cross-member extending over the rear ends of the reach-members and having depending vertical portions equipped with horizontal extensions, stems depending from the rear portion of the seat and extending freely through said extensions, compression springs supported on said extensions, tension springs having their upper ends equipped with eyes disposed between the rear ends of the reach-members and the vertical portions of the cross-member, bolts connecting said eyes with the parts embracing them, and connections between the lower ends of the tension springs and the lower ends of said stems.

4. In a device of the character set forth, the combination with a seat, of a supporting frame comprising reach-members having their front ends connected with the front portion of the seat and having widely separated rear ends, a cross-member having depending vertical portions disposed outside the rear ends of the reach-members and spaced with relation thereto, said vertical portions equipped with horizontally disposed spring sockets, a yoke pivotally connected with the rear portion of the seat and having depending stems extending through said sockets, compression springs supported on said sockets, tension springs having their upper end portions provided with attaching means disposed between the rear ends of the reach-members and the vertical portions of the cross-member, said sockets having downturned portions embracing the outer upper portions of the tension springs and connections between the lower ends of the tension springs and the lower ends of said stems.

5. In a device of the character set forth, the combination with a seat and a pair of

upper compression springs and a pair of lower tension springs, of a supporting frame having at its rear portion a cross-yoke of curved cross-section, said cross-yoke having its end portions provided with spring sockets disposed between the compression springs and the tension springs, means connecting the upper ends of the tension springs with said cross-yoke, and stems pivotally connected with the rear portion of the seat and depending through said springs and having their lower ends connected with the lower ends of the tension springs.

6. In a device of the character set forth, the combination with a seat having in its lower portion a rigid plate, of a clip secured to the front portion of said plate, a pair of clips secured to the rear portion of said plate, a supporting frame pivotally connected at its front portion with said first-named clip, a yoke pivotally connected with said pair of clips and provided with depending stems, a pair of compression springs encircling the upper portions of said stems and having their lower portions carried by said supporting frame, and a pair of tension springs having their upper portions secured to said supporting frame and having their lower portions secured to the lower ends of said stems.

DAVID S. TROXEL.

In presence of—
S. GREENWOOD,
I. DANZIGER.