Sept. 3, 1935. A. J. LINDER 2,013,353

SADDLE

Filed Oct. 4, 1932 2 Sheets-Sheet 1

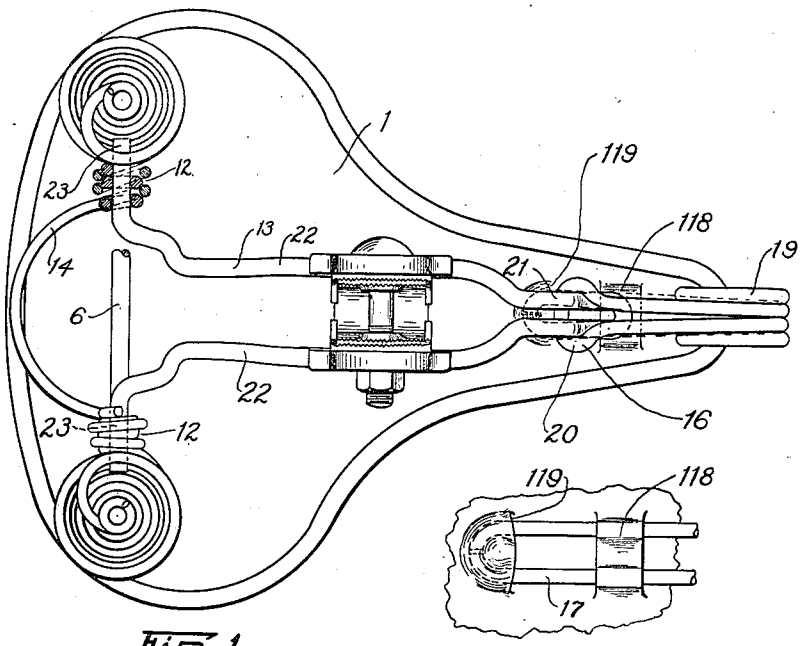


Fig 1

Fig 3

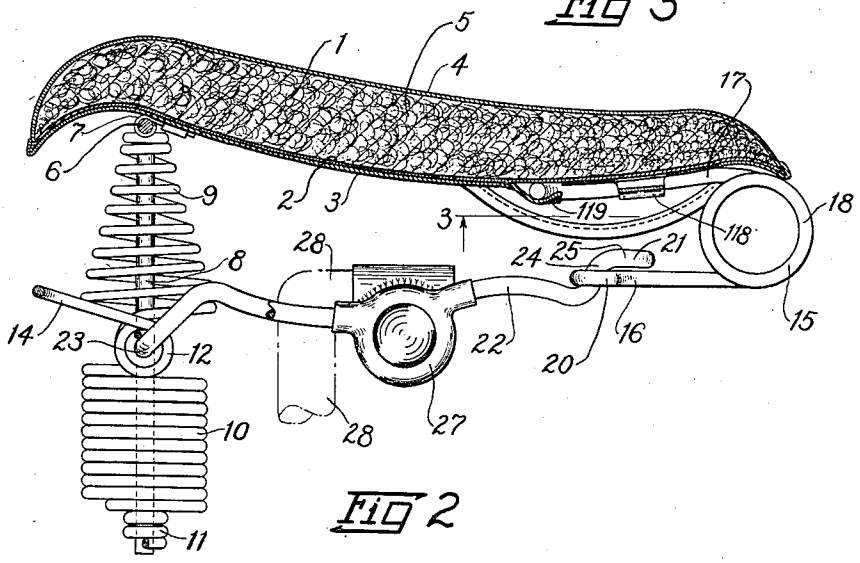


Fig 2

INVENTOR.

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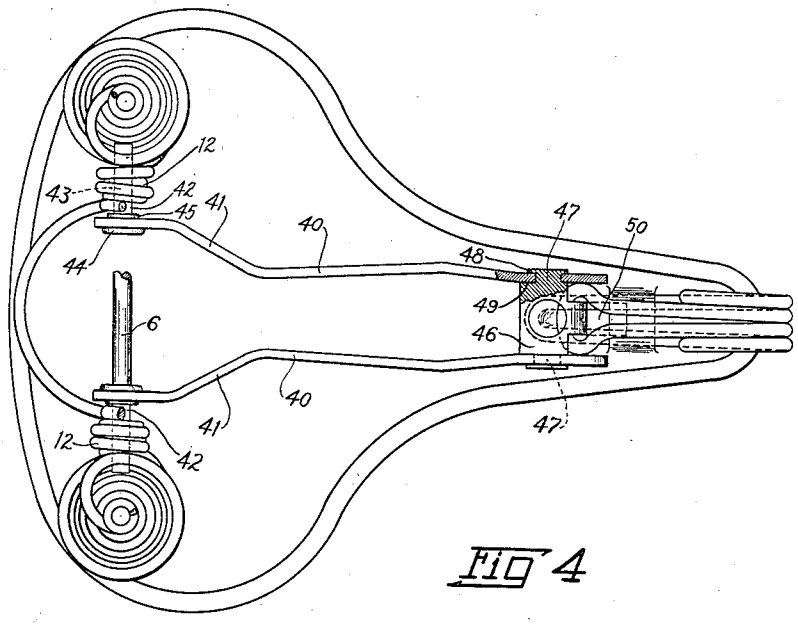


Fig 4

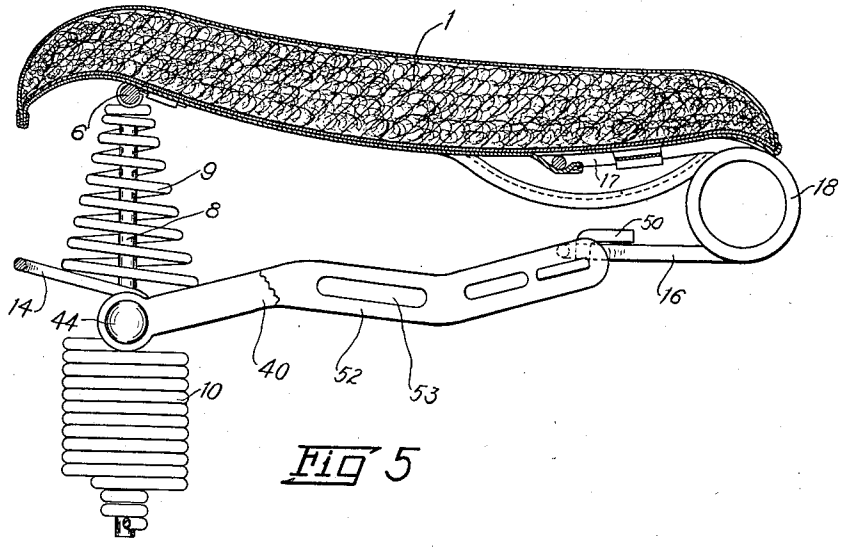


Fig 5

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Patented Sept. 3, 1935

2,013,353

UNITED STATES PATENT OFFICE

2,013,353

SADDLE

Andrew J. Linder, Elyria, Ohio, assignor to The Troxel Manufacturing Company, Elyria, Ohio, a corporation of Ohio

Application October 4, 1932, Serial No. 636,165

18 Claims. (Cl. 208—15)

This invention relates to saddles and particularly to saddles of the type adapted to be used on bicycles, motorcycles, velocipedes and the like.

It is an object of my invention to provide an improved saddle of this class.

Another object of my invention is to provide a saddle of the type referred to having an improved reach member and spring construction.

Another object is to provide, in a saddle of the type referred to, a reach member and spring construction which dispenses with the use of bolts, rivets or the like between interconnected elements thereof.

Another object is to provide, in a saddle of the type comprising rearwardly disposed and forwardly disposed springs and a reach rod connected respectively to the rearward and forward springs, an improved construction for connecting the reach rod to the forward spring whereby an improved mode of operation of the forward spring is effected.

Another object is to provide a saddle of the class referred to employing the minimum number of parts and which may be fabricated and assembled at the minimum of cost.

Other objects will be apparent to those skilled in the art to which my invention appertains.

My invention is fully disclosed in the following description taken in connection with the accompanying drawings, in which:—

Fig. 1 is a bottom plan view of a saddle embodying my invention and illustrating the reach member and spring elements thereof;

Fig. 2 is a side view, partly in elevation and partly in section, of the saddle of Fig. 1;

Fig. 3 is a fragmentary view taken from the plane 3 of Fig. 2;

Fig. 4 is a view similar to Fig. 1 illustrating a modification;

Fig. 5 is a view similar to Fig. 2 illustrating the modification of Fig. 3.

Referring to the drawings, I have illustrated at 1 the saddle seat, the construction of which constitutes no essential part of my invention and may, according to well known practice, comprise a sheet metal frame 2, an inner or bottom cover 3 of leather, cloth or the like, and an outer cover 4 of leather or the like, and suitable filling material 5.

A U-shaped yoke 6 has the closed end thereof disposed adjacent the frame 2, extending transversely thereof and is hingedly connected thereto by clips 7 secured to the frame member 2 in any suitable manner. The legs of the yoke 6 depend from the frame as at 8, extending axially through aligned springs 9 and 10, the spring 9 being an open wound conical spring, and the spring 10 being a closed wound helical spring.

The lowermost convolutions of the spring 10 as at 11 are tightly wound upon and grip the end of the side member 8. The end of the lower convolution of the spring 9 and the end of the upper convolution of the spring 10 are wound together as at 12—12 to form a pair of transversely axially aligned eyes for the reception of portions of a reach member 13 to be described.

Wound into the eyes 12 also are opposite ends of a brace member 14 formed from wire and preferably rearwardly looped.

The construction of the yoke 6, springs 9 and 10 and brace member 14 constitute no essential part of my invention, and may be variously constructed. One form thereof is illustrated in the patent to Brandt, No. 1,670,563, May 22, 1928.

At the forward end of the saddle, a wire spring 15 is provided comprising a loop portion 16, end portions 17 and an intermediate portion 18. The end portions 17 are each secured to the frame 2 in any suitable manner, as for example by offset loop portions 118 and 119 pressed out of the sheet metal frame 2 itself, under which the end portions 17 are first inserted, and which are then pressed back toward the frame and around the portions 17 to rigidly clamp them upon the frame.

Each of the end portions 17 is formed with one or more convolutions 19 to provide the intermediate spring portion 18 and the ends of the convolutions 19 extend rearwardly to form the loop portion 16. The spring thus formed is generally of U-shape with the helical spring convolutions 19 at the closed end of the U, and the ends 17 and the loop portion 16 constituting the legs of the U, as viewed from the side as in Fig. 2.

The loop portion 16 has formed in the terminus thereof an eye 20, the eye being formed by disposing portions of the wire from which the loop 16 is made in greater transverse spaced relation adjacent the extreme end of the loop than in portions nearer the intermediate spring 18.

The loop 16 thus provided is spaced downwardly from the frame 2 and the eye 20 is spaced inwardly rearwardly from the spring 18 so that the eye 20 may move resiliently vertically.

In the construction above described, the ends 17 and the loop 16 and the spring 18 are integrally formed from a single piece of wire, but, as it will be understood, these parts may be otherwise formed.

The reach member 13 above referred to is also formed from a single piece of wire but may be

otherwise constructed. When formed integrally, the wire is bent in an intermediate portion to provide a loop 21, generally of hairpin form, but which in side elevation as viewed in Fig. 2 is generally of ogee curve formation. Rearwardly of the ogee curve form loop 21, the wire of the reach member 13 is formed into transversely spaced rearwardly extending portions 22 terminating at their rearward ends in outwardly laterally extending trunnion portions 23—23, inserted into the above described eyes 12—12.

The ogee curve form loop 21 above described, is inserted through the eye 20 to dispose the intermediate portion 24 of the ogee curve in the eye and with one leg portion 25 of the ogee curve formation overlapping the loop 16 of the spring 18.

In assembling the parts described, the loop 21 is first inserted through the eye 20 with the side portions 22—22 of the reach member in a dependent position; then the reach member may be hingedly moved around the eye 20 to bring the trunnion portions 23—23 into position to be inserted into the eyes 12. The loops 21 and 20 are thus locked together; and with a predetermined degree of tension in the spring 18, the lock preventing retraction of the loop 16 counter-clockwise as viewed in Fig. 2.

A saddle post clamp device, illustrated generally at 27, is clamped upon the portion 22—22 of the reach member 13, and upon a saddle post indicated at 28. When the saddle is in use, the weight of a rider on the seat compresses the spring 9 and puts tension on the spring 10 in a well known manner, the load being transmitted through the springs to the eyes 12—12 and thence to the trunnions 23 and to the saddle post 28 through the side members 22—22 of the reach member.

Weight on the saddle is also transmitted through the spring 18 and through the eye 20 to the reach member, rocking the eye 20 with a hinging movement around the looped end of the reach member.

The above described inter-locked construction of the looped end of the reach member and the looped end of the spring 18 thus prevents relative counter-clockwise movement of the loop 16 of the spring in the spring-retracting direction but permits relative movement in the opposite direction when the spring is resiliently bent tending to move the loop 16 relatively clockwise; and the juncture of the reach member and the loop 16 is effected without bolts, rivets or the like, and simply by inserting the ogee curve form loop 21 through the eye 20 to bring the parts into the position illustrated.

A very simple construction having the advantages hereinbefore referred to is thus provided.

In the form of my invention shown in Figs. 4 and 5, a spring comprising the portions 16, 17 and 18 is provided at the forward part of the saddle similar to that above described; and springs 9 and 10, a brace member 14, a yoke member 6 with depending side legs 8 is provided at the rear of the saddle similar to that in the form above described. In this form, the reach member is of different construction.

The reach member comprises a pair of reach bars 40—40 formed from sheet metal. Rearwardly the reach bars 40—40 preferably diverge as at 41—41 and at their extreme rearward ends have trunnions 42—42 substantially coaxially disposed, extending outwardly laterally from the reach bars respectively and preferably formed from separate pieces secured to the reach bars.

The trunnions 42 preferably are in the form of rivets comprising each a cylindrical body portion 43, and a head 44, the body portions first being inserted through a suitable perforation in the sheet metal bar 44 and then rigidly riveted into the perforation by an up-set collar 45 on the opposite side of the bar from the head 44.

The cylindrical portions 43 extend into the eyes 12—12 formed from the end convolutions of the springs 9 and 10 as described for the other form.

At the forward ends of the reach bars 40—40, they are connected together by a transverse element 46, also preferably formed from sheet metal. The blank of the element 46 is preferably generally T-shaped, the ends of the cross element of the T having reduced portions 47—47 which are inserted through perforations in the bars 40 and riveted over as at 48 to rigidly clamp the bars between the riveted portion 48 and shoulders 49—49 on the element.

The element 46 thus rigidly joins the two bars 40. The stem of the T-form, shown generally at 50, is bent into ogee curve formation when viewed from the side as in Fig. 5.

The reach bars 40 including their trunnions 42—42 and the ogee curve form tongue 50 may be assembled with the springs at the rearward and at the forward ends of the saddle in a manner similar to that described for the other form, and as will now appear, the mode of the operation of the form of Figs. 4 and 5 will be substantially the same as that of the other form.

The reach bars 40 as viewed from the side in Fig. 5 may be variously formed. As illustrated, they are generally of a flat ogee curve formation to provide an intermediate portion 52 disposed generally parallel to the seat 1, to accommodate a substantially parallel slot 53 in each of the bars, by means of which slot, a forwardly and rearwardly adjustable saddle post clamp may be secured to the reach bars.

My invention is not limited to the exact details of construction shown and described. Many changes and modifications may be made within the scope and spirit of my invention without sacrificing its advantages.

I claim:

1. In a saddle, a seat element, and a forwardly and rearwardly extending reach bar construction having an intermediate portion formed to be secured to a saddle post securing means, the respective ends of the reach bar construction being connected to the saddle by resilient devices, the device at the forward end comprising a U-form element having a resilient intermediate portion and having one leg portion secured to the saddle and the other leg portion formed with an eye, and the forward end portion of the reach bar construction being generally of ogee curve formation and projected into the eye.

2. In a saddle, a seat element, and a forwardly and rearwardly extending reach bar construction having an intermediate portion formed to be secured to a saddle post securing means, the respective ends of the reach bar construction being connected to the saddle by resilient devices, the device at the forward end comprising a U-form element having legs tending resiliently to diverge, one leg portion secured to the saddle and the other leg portion formed with an eye, and the forward end portion of the reach bar construction being generally of ogee curve formation and projected into the eye.

3. In a saddle, a seat element, and a forwardly and rearwardly extending reach bar construction having an intermediate portion formed to be secured to a saddle post securing means, the respective ends of the reach bar construction being connected to the saddle by resilient devices, the device at the forward end comprising a U-form element having legs tending resiliently to diverge, one leg portion secured to the saddle and the other leg portion formed with an eye, the forward end portion of the reach bar construction being generally of ogee curve formation and projected into the eye and an ogee curve form leg overhanging the eye.

4. In a saddle, a seat element, and a forwardly and rearwardly extending reach bar construction having an intermediate portion formed to be secured to a saddle post securing means, the respective ends of the reach bar construction being connected to the saddle by resilient devices, the device at the forward end provided with an eye resiliently depressed, and the forward end of the reach bar construction provided with a portion of generally ogee curve formation projected into the eye.

5. In a saddle, a seat element, and a forwardly and rearwardly extending reach bar construction having an intermediate portion formed to be secured to a saddle post securing means, the respective ends of the reach bar construction being connected to the saddle by resilient devices, the device at the forward end provided with an eye resiliently depressed, and the forward end of the reach bar construction provided with a portion of generally ogee curve formation projected into the eye and with an ogee curve form leg overhanging the eye.

6. A saddle comprising a generally horizontally disposed seat and a reach bar construction connected by rearward and forward spring devices to the seat, the reach bar comprising a pair of rearwardly extending bar portions terminating in laterally extending coaxial trunnion portions engaged with a rearward spring device, the bar portions being forwardly joined in a loop, generally of ogee curve formation in side elevation, and connected to the forward spring device.

7. A saddle comprising a generally horizontally disposed seat and a reach bar construction connected by rearward and forward spring devices to the seat, the reach bar comprising a pair of rearwardly extending bar portions terminating in laterally extending coaxial trunnion portions engaged with a rearward spring device, the bar portions being forwardly joined in a loop, generally of ogee curve formation in side elevation, and projected into an eye-form resiliently movable portion of the forward spring device.

8. A saddle comprising a generally horizontally disposed seat and a reach bar construction connected by rearward and forward spring devices to the seat, the reach bar comprising a pair of rearwardly extending bar portions terminating in laterally extending coaxial trunnion portions engaged with a rearward spring device, the bar portions being forwardly joined in a loop, generally of ogee curve formation in side elevation, and projected into an eye-form resilient downwardly depressed portion of the forward spring device, with an ogee curve form leg overlapping the eye.

9. In a saddle, a seat element, and a forwardly and rearwardly extending reach bar construction having an intermediate portion formed to be secured to a saddle post securing means, the respective ends of the reach bar construction being connected to the saddle by resilient devices, the device at the forward end comprising a U-form element having a resilient intermediate portion and having one leg portion being secured to the saddle and the other leg portion formed with an eye, and the forward end portion of the reach bar construction adapted to be slidably projected into the eye, the reach bar and the said device having engageable portions limiting sliding movement.

10. In a saddle, a seat element, and a forwardly and rearwardly extending reach bar construction having an intermediate portion formed to be secured to a saddle post securing means, the respective ends of the reach bar construction being connected to the saddle by resilient devices, the device at the forward end comprising a U-form element having legs tending resiliently to diverge, one leg portion being secured to the saddle and the other leg portion formed with an eye, and the forward end portion of the reach bar construction adapted to be slidably projected into the eye, the reach bar and the said device having engageable portions limiting sliding movement.

11. In a saddle, a seat element, and a forwardly and rearwardly extending reach bar construction having an intermediate portion formed to be secured to a saddle post securing means, the respective ends of the reach bar construction being connected to the saddle by resilient devices, the device at the forward end comprising a U-form element having legs tending resiliently to diverge, one leg portion being secured to the saddle and the other leg portion formed with an eye, the forward end portion of the reach bar construction adapted to be slidably projected into the eye and having a leg overhanging the eye, the said leg limiting retractive sliding movement of the reach bar.

12. In a saddle, a seat element, and a forwardly and rearwardly extending reach bar construction having an intermediate portion formed to be secured to a saddle post securing means, the respective ends of the reach bar construction being connected to the saddle by resilient devices, the device at the forward end being provided with an eye, and the forward end of the reach bar construction being provided with a portion adapted to be slidably projected into the eye.

13. In a saddle, a seat element, and a forwardly and rearwardly extending reach bar construction having an intermediate portion formed to be secured to a saddle post securing means, the respective ends of the reach bar construction being connected to the saddle by resilient devices, the device at the forward end being provided with an eye resiliently depressed, and the forward end of the reach bar construction being provided with a portion adapted to be slidably projected into the eye and with a leg overhanging the eye to limit relative retractive movement of the reach bar forward end.

14. A saddle comprising a generally horizontally disposed seat and a reach bar construction connected by rearward and forward spring devices to the seat, the reach bar comprising a pair of rearwardly extending bar portions terminating in laterally extending coaxial trunnion portions engaged with a rearward spring device and disengageable therefrom by lateral movement of the bar portions towards each other, the bar portions being forwardly joined in a loop, and connected to the forward spring device.

15. A saddle comprising a generally horizontally disposed seat and a reach bar construction connected by rearward and forward spring devices to the seat, the reach bar comprising a pair of rearwardly extending bar portions terminating in laterally extending coaxial trunnion portions engaged with a rearward spring device and disengageable therefrom by lateral movement of the bar portions towards each other, the bar portions being forwardly joined in a loop, and projected into an eye-form resiliently movable portion of the forward spring device.

16. A saddle comprising a generally horizontally disposed seat and a reach bar construction connected by rearward and forward spring devices to the seat, the reach bar comprising a pair of rearwardly extending bar portions terminating in laterally extending coaxial trunnion portions engaged with a rearward spring device and disengageable therefrom by lateral movement of the bar portions towards each other, the bar portions being forwardly joined in a loop, and projected into an eye-form resilient downwardly depressed portion of the forward spring device, with a leg overlapping the eye.

17. In a saddle, a seat element, a forwardly and rearwardly extending reach bar construction having an intermediate portion formed to be secured to a saddle post securing means, the respective ends of the reach bar construction being connected to the saddle by resilient devices, the device at the forward end being provided with a rearwardly extending element and means adapted to be slidably interlinked with corresponding means on the reach bar construction to provide a generally sliding hinging connection, and one of said means being provided with a portion overlapping said other means to prevent relative hinging movement of the joined elements in one direction relative to the seat element.

18. In a saddle, a seat element, a forwardly and rearwardly extending reach bar construction having an intermediate portion formed to be secured to a saddle post securing means, the respective ends of the reach bar construction being connected to the saddle by resilient devices, the device at the forward end being provided with a rearwardly extending downwardly resilient retractible element and means adapted to be slidably interlinked with corresponding means on the forward end of the reach bar construction to provide a generally hinging and relatively slidable connection therebetween, and one of said means being provided with a portion overlapping the other said means to prevent relative hinging movement of the joined elements relatively away from the seat element.

ANDREW J. LINDER.