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M. J. WALSH

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COIL CLIP CONNECTION FOR CYCLE SADDLE

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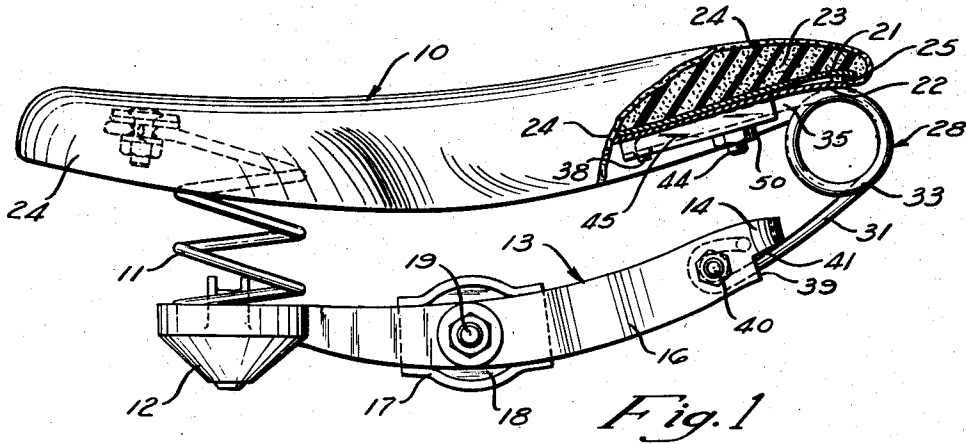


Fig. 1

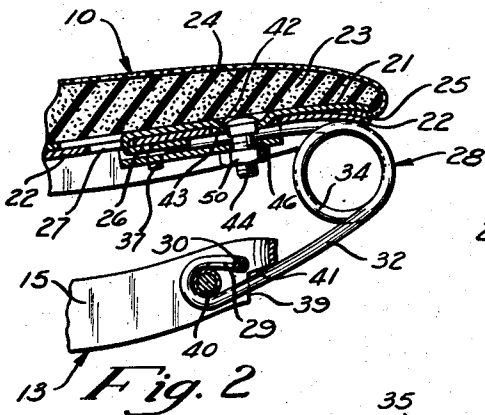


Fig. 2

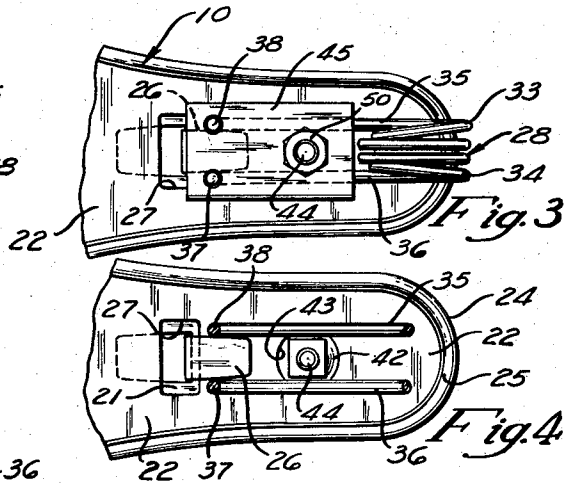


Fig. 3

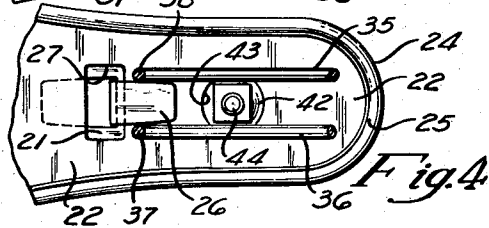


Fig. 4

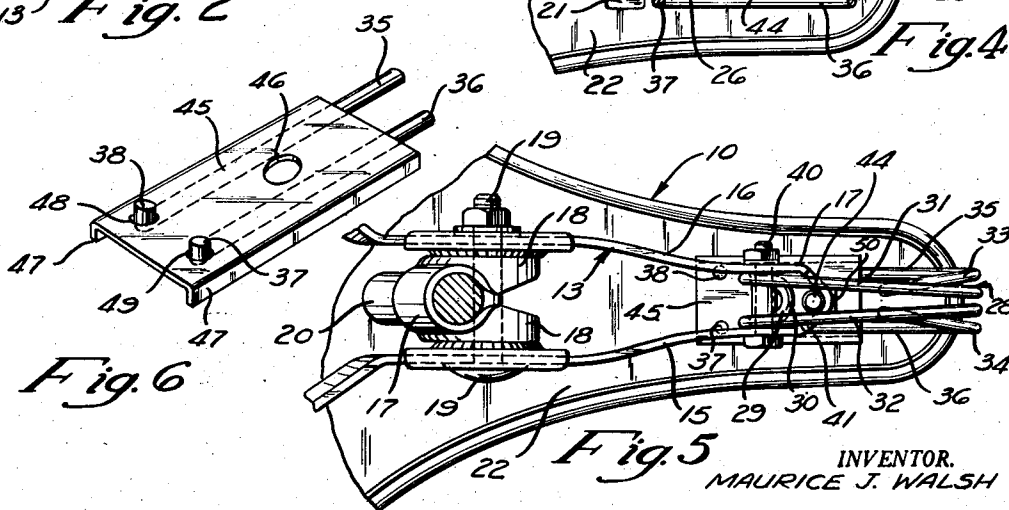


Fig. 5

Fig. 6

INVENTOR.
MAURICE J. WALSH

BY
RICHEY, WATTS, EDGERTON & McNENNY
N. F. McNenny
ATTORNEYS

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Maurice J. Walsh, Worcester, Mass., assignor of one-half to The Faulhaber Company, Monroeville, Ohio, a corporation of Ohio, and one-half to The Persons-Majestic Manufacturing Company, Worcester, Mass., a corporation of Massachusetts

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5 Claims. (Cl. 155—5.22)

This invention relates to saddles for bicycles, velocipedes and the like, and more particularly to a new and improved saddle supporting and tensioning means.

The nose coil of a cycle saddle must be adapted to withstand frequent and violent flexing occurring at or near the point of attachment of such coil to the saddle. Such attaching means, therefore, must be adapted to withstand various stresses and strains occurring during the operation of such a cycle, and yet such means should be capable of being produced at a relatively low cost and, at the same time, be capable of quick and easy installation.

Therefore, an object of this invention is to provide an improved connection for the nose coil of a saddle to the base member thereof.

Another object is to provide a simple, easily constructed and readily assembled means for attaching a nose coil to a saddle, which will withstand the frequent flexing occurring at or near the point of attachment.

Other objects of this invention are to provide a saddle construction, adapted to be produced at a relatively low cost, the same being sturdy and reliable in operation and quickly and easily installed.

The foregoing and additional objects and advantages of this invention will appear during the course of the following description of one illustrative embodiment of the invention.

In the accompanying drawings forming a part of the description of this invention:

Fig. 1 is a side elevation view of a bicycle saddle showing a partial section of the nose coil connection;

Fig. 2 is a central, vertical sectional view through the forward portion of the saddle illustrating the means for attaching the nose coil;

Fig. 3 is a partial bottom view of the nose coil showing the cover plate;

Fig. 4 is a partial bottom view of the nose coil connection with the cover plate of Fig. 3 removed;

Fig. 5 is a bottom view of a portion of the saddle, while

Fig. 6 is a perspective view of a nose coil ends and the cover plate.

In the drawings, the numeral 10 refers generally to a saddle of the type adapted to be used on bicycles, motorcycles or the like. The same is provided with a pair of spaced rear supporting springs 11 connected to the opposite ends of a transverse bracket 12 secured to the rearward end of a reach 13. The reach 13, disclosed in the illustrative embodiment, comprises a single strap of metal bent into a U-shape at its forward end as indicated at 14 and provided with spaced rearwardly extending portions 15 and 16. An angularly adjustable clamp 17, positioned between the spaced reach portions 15 and 16, is formed with serrated surfaces engaging serrated clamp plates 18. A bolt 19 extends through spaced reach portions 15 and 16 clamp 17 and clamp plates 18 in such manner that, when the bolt 19 is tightened the reach portions 15 and 16 are pressed toward each other thereby compressing the clamp 17 so that it grips a saddle post 20.

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The seat portion of the saddle 10 comprises a pair of similarly shaped metal base plates 21 and 22, and a cushion 23 positioned over the plate 21 while a flexible cover sheet 24 of imitation leather or the like, is strapped over the cushion 23 with its marginal edge portion gripped between the base plates 21 and 22 as illustrated at 25. The two base plates 21 and 22 are held tightly together by tongues 26 struck from the plate 21 passed through aperture 27 in the plate 22 and bent firmly against the under surface of the plate 22. One of the tongues 26 preferably is located near the front of the seat in order to cooperate with the attaching means for the nose coil.

The nose coil 28 consists of a single piece of suitable wire doubled upon itself at its center, as indicated at 29. The doubled portion 29 of the wire is formed into a loop 30. Straight wire portions 31 and 32 extending from the loop 30 are wound into spring coils 33 and 34 and then bent to form straight spaced parallel end portions 35 and 36 terminating in short inwardly extending ends 37 and 38 bent sharply substantially at right angles to the parallel end portions 35 and 36. The forward U-shaped end 14 of the reach 13 is formed with a notch indicated at 39 while a bolt 40 extends through the two reach members 15 and 16 a short distance rearwardly of the notch 39, the bolt 40 passing through the loop 30 formed at the doubled end of the nose coil wire, and when tightened pivotally secures the loop 30 of the nose coil to the reach 13. The straight portions 31 and 32 between the loop 30 into spring coils 33 and 34 pass through the notch 39 and engage the upper edge 41 of the notch 39 when the saddle is completely assembled.

The base plate 21 is formed with a depressed portion 42 extending into an opening 43 into the lower base plate 22 for securing the nose coil to the base plate 21. The depressed portion 42 of the base plate 21 is provided centrally with a square opening fitting the square shoulder of a carriage bolt 44. The cover plate 45 is formed with an aperture 46 receiving the bolt 44 and is also provided with side flanges 47 adapted to engage the under surface of the base plate 22, and in cooperation with spaced rearwardly portioned holes 48 and 49 to receive the inwardly turned ends 37 and 38 on the straight portions 35 and 36 of the nose coil, said straight portions 35 and 36 of the nose coil being disposed on opposite sides of the bolt 44 and on opposite sides of the in-turned tongue 26 struck from the base plate 21 and positioned rearwardly of the bolt 44.

A nut 50, screwed on the bolt 44 serves to press the cover plate 45 tightly against the under surface of the straight portions 35 and 36 of the nose coil, and in turn, to press the upper surface of the straight portions 35 and 36 against the under side of the base plate 22 with the down-turned ends 37 and 38 extending through the holes 48 and 49 respectively. By means of the foregoing construction, whenever the cover plate 45 is assembled over the straight wire portions 35 and 36 and the bolt 44 and the nut 50 are tightened, the wire portions 35 and 36 are firmly secured in position and thereby are prevented from escaping from their attachment, by movement in any direction. Preferably the flanges 47 are of less depth than the thickness of the wire portions 35 and 36, but in any event are of less depth than the thickness of the wire portions 35 and 36 plus the height of the end portions 37 and 38, so that when the cover plate 45 is secured in position, the wire end portions 37 and 38 cannot escape from the holes 48 and 49.

It will be understood by those skilled in the art that the nose coil may be formed from spring steel wire, which is first wound and bent into the desired shape and then given a spring tempered by conventional treatment. In the embodiment herein disclosed the nose coil is initially formed with the straight portions 31 and 32 separated

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from straight portions 35 and 36 through a greater angle than that which the parts assume in assembled relation, so that it is necessary to tension the coils 33 and 34 by bending the opposite ends toward each other to assemble the nose coil in position. After the parts are assembled, unwinding of the coils to relieve the initial tension by upward movement of the straight portions 35 and 36, is prevented by the long bearing surfaces of these straight portions 35 and 36 against the under side of the base plate 22. Similarly, unwinding by downward movement of the straight portions 31 and 32 is prevented by the engagement of the loop 30 around bolt 40 and the engagement of the straight portions 31 and 32 with the edge 41 of the notch 39. At the same time, the nose coil is free to yield to provide a resilient support of a part of the weight of the rider on the seat, since the front end of the seat and the coils 33 and 34 may move downwardly with the loop 30 pivoting around the bolt 40, accompanied by further winding up of the coils 33 and 34 to provide increasing spring force with increased movement. Also in the present embodiment of my invention, straight end portions 35 and 36 are initially tensioned to lie substantially parallel to each other slightly closer together than the holes 48 and 49. The tongue 26 is arranged to enter between and spread the ends of the wires 35 and 36 to the exact spacing of the holes 48 and 49 for facilitating assembly.

While a preferred embodiment of the invention has been described in considerable detail, it will be understood that various modifications and rearrangements of the parts may be resorted to without departing from the scope of the invention as defined in the following claims.

I claim:

1. In a saddle for cycles having a base means and reach means, the combination including, a nose coil pivotally mounted on said reach means, said nose coil having two spring extensions extending adjacent said base means, bolt means affixed to said base means, said spring extensions extending one on each side of said bolt means, a cover plate provided with a plurality of apertures for insertion of the bolt means and spring extensions there-through, whereby securement of said bolt means secures the nose coil to said base means.

2. A saddle for cycles comprising, a saddle seat, a base means disposed under the saddle seat, reach means for supporting the saddle seat, coil spring means mounted on one end of said reach means and a nose coil mounted on the other end of said reach means, said nose coil including two rearwardly extending spring extensions adjacent said base means having downwardly directed end members at their rearward ends, bolt means secured to said base means, said spring extension being disposed along the sides of said bolt means with one extension disposed on each side of said bolt means, and a cover plate disposed along said base means, having spaced longitudinally disposed upwardly directed side flange members, and provided with a set of apertures receiving said downwardly directed spring end members and an aperture receiving said bolt means, said flange members serving to prevent said downwardly directed spring end members from working out of said cover plate apertures.

3. A saddle for cycles comprising, a base means, reach means for supporting the saddle, a nose coil mounted on said reach means, said nose coil including two spaced parallel rearwardly extending spring extensions adjacent

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said base means having downwardly directed end members at their rearward ends, bolt means secured to said base means, said spring extensions disposed one on each side of said bolt means, and a cover plate disposed along said base means, having spaced longitudinally disposed upwardly directed side flange members, and provided with a pair of apertures receiving said downwardly directed spring end members and an aperture receiving said bolt means, the depth of said flange members being less than the combined thickness of said spring extensions plus the height of said downwardly disposed spring end members, whereby when said cover plate is secured to said base means by said bolt means, said spring end members are securely retained in the pair of cover plate apertures.

4. A saddle for cycles comprising, a base means, reach means, a nose coil mounted at one end of said reach means, said nose coil including two spaced parallel rearwardly extending spring extensions adjacent said base means having downwardly directed end members at their rearward ends, bolt means secured to said base means, said spring extensions having one spring extension disposed on each side of said bolt means, and a cover plate disposed along said base means, and provided with a pair of apertures receiving said downwardly directed spring end members and an aperture for receiving said bolt means, whereby said cover plate may be drawn against said base means and said spring extensions are clamped between said base means and said plate when said bolt means is inserted in said cover plate bolt aperture and tightened.

5. In a saddle for cycles having a base means and reach means, said reach means having saddle supporting nose coil means pivotally mounted at the other end thereof adapted to be connected to said base means, the combination including, a connecting means affixed to said base means, said nose coil means having extension members integral therewith, said pivotal nose coil means being adapted to position said integral extension members contiguous said base means with an extension member located on each side of said connecting means, spreader means integral with said base means for holding said base means together when the saddle is assembled, said ends of said extension members extending downwardly of said base means, a cover plate provided with an aperture for allowing said connecting means to pass therethrough and having a pair of spaced apertures for allowing the ends of said extension members to pass therethrough, whereby after the cover plate is positioned on the connecting means tightening said connecting means secures the extension members between said cover plate and said base means thereby securing the nose coil means to said base means in such manner that the apertures in said cover plate prevent lateral movement of said extension members in relation to said base means.

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