Sept. 3, 1935. J. W. BRANDT 2,013,624

SADDLE

Filed Oct. 19, 1933

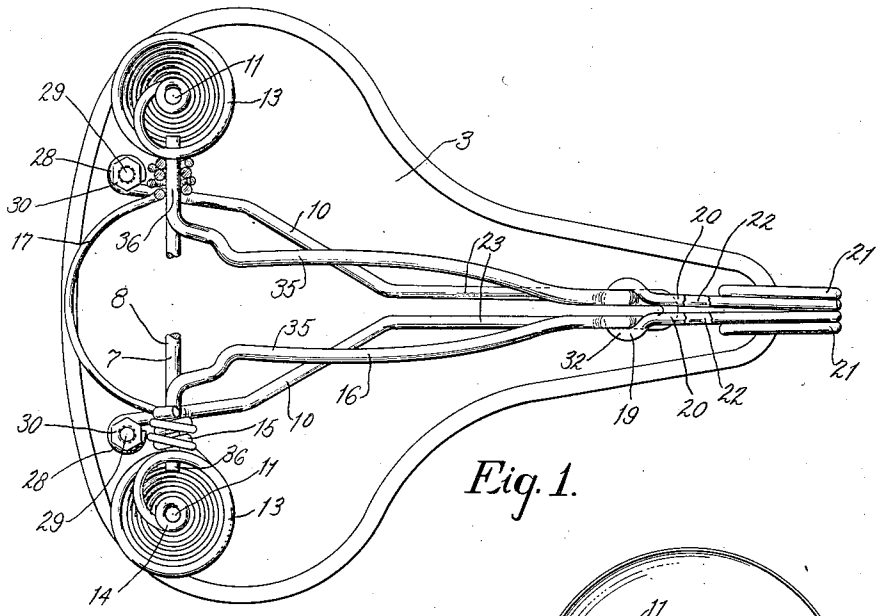


Fig. 1.

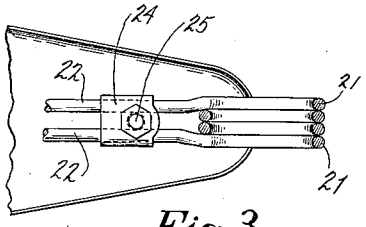


Fig. 3.

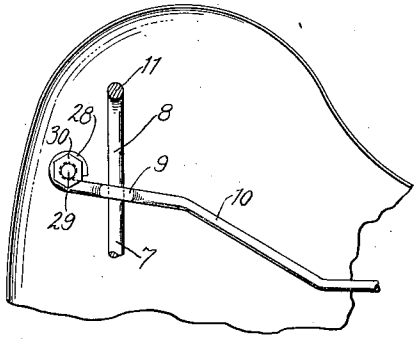


Fig. 4.

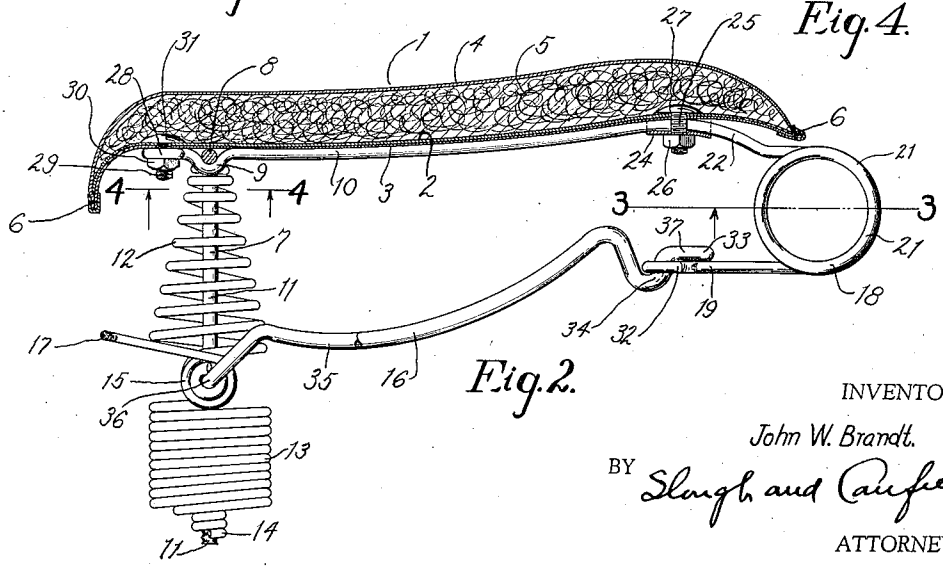


Fig. 2.

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Patented Sept. 3, 1935

2,013,624

UNITED STATES PATENT OFFICE

2,013,624

SADDLE

John W. Brandt, Elyria, Ohio

Application October 19, 1933, Serial No. 694,260

4 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 general class.

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

Another object is to provide, in a saddle of the general class referred to, and provided with forwardly and rearwardly disposed springs, improved means for securing the springs to the saddle.

Another object is to provide, in a saddle of the class referred to, comprising a metal base frame element, improved means for securing the saddle springs to the frame element.

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.

Another object is to provide, in a saddle of the class referred to having in the forward portion thereof a generally U-form spring, improved means for securing a fixed leg of the U-shaped spring to the saddle.

Another object is to provide, in a saddle of the class referred to, an improved construction of a generally U-form spring for the forward part of the saddle.

Another object is to provide, in a saddle of the class comprising a sheet metal base frame to which saddle supporting springs are attached, improved means for securing the springs to the frame whereby the construction of the frame is simplified.

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 drawing, in which:

Fig. 1 is a bottom plan view of a saddle in which my invention is embodied.

Fig. 2 is a side sectional view of the saddle of Fig. 1, the section being longitudinal with the saddle in its upright or normal position;

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

Fig. 4 is a fragmentary sectional view taken from the plane 4—4 of Fig. 2 with parts behind the sectional plane omitted for simplicity.

Referring to the drawing, I have shown at 1 generally the saddle seat comprising a sheet metal frame 2 and 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. The exact shape and contour of these parts constitute no essential part of my invention and it may be that they are well known in the practice of this art; and the parts may be joined at the peripheral edge portions in any suitable manner well known in the art and as indicated generally at 6.

A U-shaped yoke indicated generally at 7 has the closed end 8 thereof disposed adjacent the sheet metal frame 2, or against or adjacent to the cover 3 thereof, and extending transversely thereof upon a substantially planar portion of the seat frame 2 and is hingedly connected to the frame 2 by being disposed over a transversely spaced pair of loops 9—9 of a wire element 10 to be more fully described and which is secured against the frame 2 as will appear later.

The legs 11—11 of the yoke 7 depend from the closed end portion 8 thereof and extend axially through aligned springs 12 and 13, the spring 12 being an open wound conical spring and the spring 13 being a close wound helical spring. The lowermost convolutions of the spring 13 as at 14 are tightly wound upon and grip the end of the U-legs 11. The end of the lower convolution of the spring 12 and the end of the upper convolution of the spring 13 are wound together as at 15 to form a pair of transversely axially aligned eyes for the reception of portions of a reach member 16, to be described. Wound into the eyes 15 also are the opposite ends of a brace 17 formed from wire and preferably rearwardly looped.

The construction of the U-shaped yoke 7, springs 12 and 13 and brace member 17 constitute no essential part of the present 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, indicated generally at 18, is provided comprising a loop portion 19, the side limbs 20—20 of which extend forwardly and are formed into circular helical convolutions 21—21 to provide a spring proper and continue out of the spring convolutions into securing portions 22—22, the latter continuing into the wires 10—10 hereinbefore referred to.

The securing portions 22 and the integral wires 10 are formed to lie closely adjacent to the underside of the frame 2 or upon the cover 3 thereof; and at the longitudinally intermediate and forward portions of the saddle are disposed substantially parallel to each other as shown at

23—23, Fig. 1, and in a forward portion of the saddle, which may be substantially opposite or directly over the end of the loop portion 19, the securing portions 22 are rigidly secured to the saddle frame 2. Any suitable means may be provided to effect this anchoring or securing of the portions 22 to the saddle frame, but preferably I provide a sheet metal clip 24, Figs. 2 and 3, disposed upon the lower side of the portions 22, and a bolt 25 projected downwardly through suitable perforations in the frame 2, and between the portions 22—22 and through a perforation in the clip 24, and a nut 26 on the bolt to clamp the clip and the wire portions 22—22 upon the seat between the nut and the head 27 of the bolt 25.

Rearwardly of the intermediate portion of the saddle, the wires 10—10 diverge and are formed with the loop portions 9—9 above referred to which bridge and tightly engage the closed end U of the yoke 7 above described. Beyond the yoke the wires 10—10 are formed with eyes 28—28 rigidly secured to the saddle frame 2 by bolts 29—29 projected downwardly through suitable perforations in the saddle frame 2, and through the eyes 28; and nuts 30—30 rigidly clamp the eyes upon the frame 2 between the nut 30 and head 31 of the bolts 29.

Preferably the bolts 29 are disposed adjacent to the loop 9 whereby the stiffness of a wire 10 of ordinary size may, when the eyes 28 are clamped upon the frame, firmly hold the closed end 8 of the yoke against the seat frame 2.

The loop portion 19 has formed in the inner terminus thereof an eye 32 formed by disposing portions of the wire from which the loop is made in greater transverse spaced relation adjacent the extreme end of the loop than in portions nearer the intermediate spring 18.

The forward spring above described comprising the loop portion 19, the securing portions 22—22 and the intermediate spring portion 18 thus constitute a spring generally of the U-form with the spring portion 18 at the closed end of the U and with the loop portion 19 and securing portions 22 constituting respectively the legs of the U.

The loop portion 19, in the construction above described, is spaced downwardly from the frame 2 and the eye 32 thereof is spaced inwardly rearwardly from the spring 18 so that the eye 32 may move resiliently vertically.

The entire construction comprising the loop portion 19, spring 18, securing portions 22, wire 10 and loop 9 and eyes 28 may be formed from a single piece of wire, although as will be understood some of the advantages of my invention may be practiced if it is composed of more than one piece.

The reach member 16 above referred to is also formed from a single piece of wire but may be otherwise constructed. When formed integrally, the wires bend in an intermediate portion to provide a loop 33 generally of hairpin form but which in side elevation as viewed in Fig. 2 is generally Z-form or S-form. Rearwardly of the Z-form loop 34, the wire of the reach member is formed into transversely spaced rearwardly extending portions 35—35 terminating at their rearward ends in outwardly laterally extending trunnion portions 36—36 inserted into the above described eyes 15—15.

The Z-shaped loop 34 above described is inserted through the eye 32 to dispose it with one leg portion 37 of the Z-shape overlapping the loop portion 19 of the forward spring.

In assembling the parts described, the loop 33 is first inserted through the eye 32 with the side portions 35 of the reach member in a dependent position; then the reach member may be hingedly moved around the eye 32 to bring the trunnion portions 36—36 into position to be inserted into the eyes 15. If, however preferred, the trunnion portions may be first inserted into their eyes and thus a complete assembly made with the reach member and the rearward spring, and then before assembling the parts upon the saddle, the eye 32 may be assembled with the forward end of the reach rod as illustrated and described.

The loops 33 and 19 are thus locked together and with a predetermined degree of tension in the spring 18, the lock preventing retraction of the loop portion 19 counter-clockwise as viewed in Fig. 2.

A saddle post clamp device, not shown in the drawing, may be clamped upon the portions 35 of the reach member and upon a saddle post in the usual manner. When the saddle is in use, the weight of a rider on the seat compresses the spring 12 and places tension on the spring 13 in a well known manner, the load being transmitted through the spring to the eyes 15—15 and thence to the trunnions 36 and to the saddle post through the side members 35 of the reach member. Weight on the saddle is also transmitted through the spring 18 and through eye 32 to the reach member, rocking the eye with a hinging movement around the looped end of the reach member.

The above described interlocked construction of the looped end of the reach member and the looped end of the spring thus prevent relative counter-clockwise movement of the loop of the spring in the spring-retracted direction but permits relative movement in the opposite direction when the spring is resiliently bent tending to move the loop relatively clockwise; and the juncture of the reach member and the loop is effected without bolts, rivets or the like and simply by inserting the Z-form loop 34 through the eye 32 to bring the parts into the position illustrated.

The construction and mode of operation of the juncture at the eye 32 constitute no essential part of the present invention and may be variously constructed. Furthermore the connection between the loop portion 19 of the spring 18 to the reach member 16 and the connection of the reach member 16 to the rearward spring or springs constitute no essential part of my invention and may be variously constructed.

The exact construction illustrated and described in this connection forms the subject matter of the copending application of Andrew J. Linder, Serial No. 636,165, filed October 4, 1932, for improvements in Saddles, and reference may be had thereto.

In the construction of the spring 18 and particularly of the securing portions 22 and the wire 10 integral with the spring 18, it will be observed that a very simple mode of securing the spring 18 to the saddle is provided. Heretofore various forms of construction have been devised involving cutting and pressing operations to form the saddle frame 2 for the reception of spring securing means. In the form here described and illustrated, only simple perforations need be provided in the frame element 2.

By carrying the securing portions 22 of the spring 18 rearwardly, continuing them in the wire 10, a number of joint functions are performed. There is little or no liability that the

securing portions 22 will become loose in the bending of the spring because of the great longitudinal extent of the wire 10 secured against the saddle frame; and there is no liability that the securing portions 22 may shift longitudinally because of the double anchorage effected by the bolts 25 and 29; and the securing portions 22 being extended into the wire 10, provide the securing means or loop 9 for the yoke 7, not only to support it but to prevent longitudinal shifting thereof; and because of the stiffness of the wire 10 from which it and the securing portions and the spring are formed, the juncture effected by the bolts 25 and 29 may be very rigid and permanent; and the loop 9, while preventing longitudinal shifting as above described, provides a very simple hinge construction for the yoke 7. Again, it will be observed that the entire supporting and spring construction may be attached to the saddle frame or removed therefrom by a screwing on or taking off of only three nuts 30—30 and 26, permitting an easy interchangeability of saddles and supporting spring structure. And again, there is no liability that the cover 3 may be mutilated at the juncture with the spring construction inasmuch as only simple perforations need be made therethrough and these are entirely covered by the eyes 28 and the securing portions 22—22 and the clip 24, and thus a very neat appearing saddle is provided.

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

I claim:

1. In a saddle comprising a seat, a seat frame, and a longitudinally extending reach member, a spring member having a pair of securing elements disposed longitudinally under the seat and secured thereto, each securing element having a downwardly looped portion and a loop element spaced from the seat and connected at its inner end to a forward portion of the reach member, and a U-shaped depending member hingingly disposed intermediate said downwardly looped portion of the securing element and said seat frame.

2. In a saddle comprising a seat, a seat frame, and a longitudinally extending reach member, a unitary spring member construction having a pair of securing elements disposed longitudinally under the seat and secured thereto, each securing element having an offset portion integral therewith adjacent its rear extremity a coil portion disposed forwardly thereof, and a loop element spaced from the seat and connected at its inner end to a forward portion of the reach member, and a U-shaped depending member hingingly connected intermediate said offset portions and said seat frame.

3. In a saddle comprising a seat, a seat frame, and a longitudinally extending reach member, a unitary spring member construction having a pair of securing elements disposed longitudinally under the seat and secured thereto at forward and rearward portions of the frame, each securing element having an offset portion integral therewith adjacent its rear extremity, and terminating in an eye portion within which securing means are disposed to secure said spring member to said seat frame at a rearward portion of the frame, a coil portion disposed forwardly thereof and connected at its inner end by a loop portion to a forward portion of the reach member, and a U-shaped depending member hingingly connected intermediate said offset portions and said securing elements.

4. In a saddle comprising a seat, a seat frame, and a longitudinally extending reach member, a generally U-shaped member having the U web transversely abutting the under side of the seat and the U legs depending therefrom, and a spring member comprising generally longitudinally extending portions substantially abutting the under side of the seat and looped over the said U web at spaced points and secured rearwardly thereof to the seat, the forward portion of the spring member being reversely curved to provide an end spaced from the seat, and the reach member being hingingly connected to said forward portion and resiliently connected to said U member.

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