

H. A. JACKSON.
 SADDLE FOR MOTOR CYCLES OR BICYCLES.
 APPLICATION FILED AUG. 23, 1915.

1,229,468.

Patented June 12, 1917.

2 SHEETS—SHEET 1.

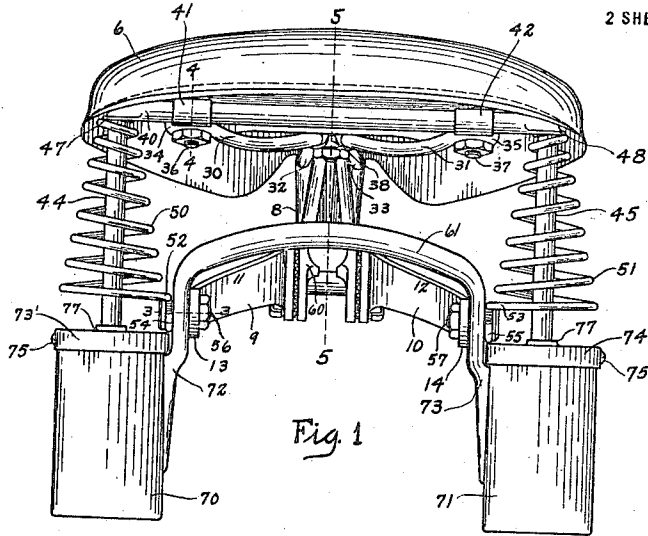


Fig. 1

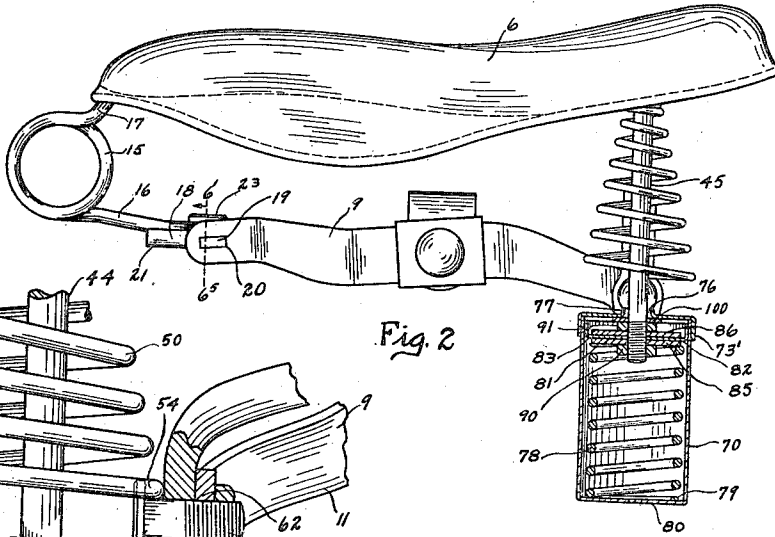


Fig. 2

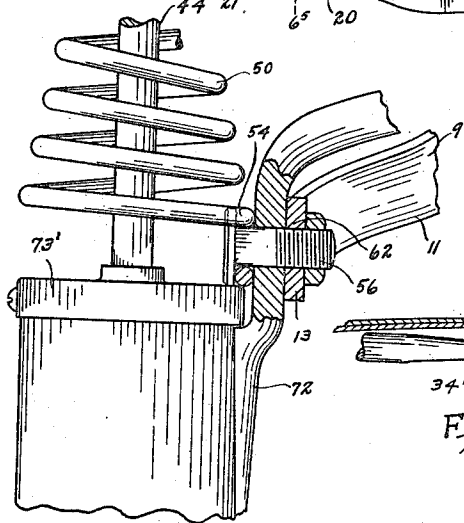


Fig. 3

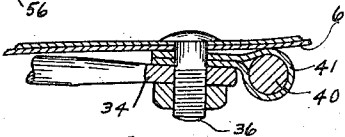


Fig. 4

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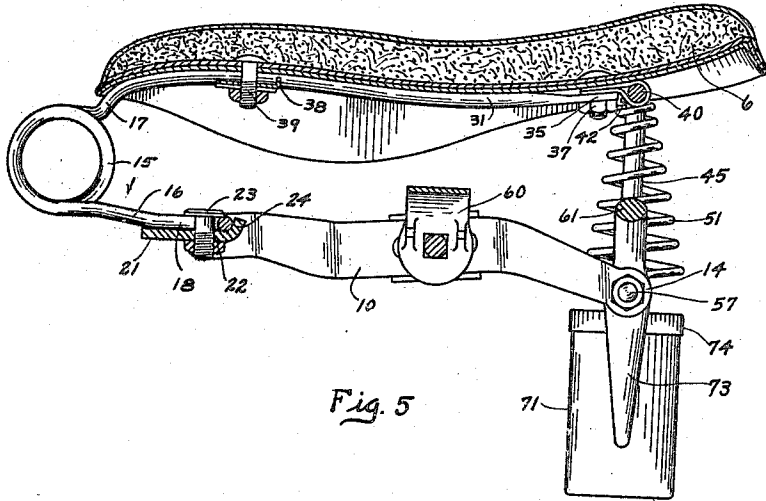


Fig. 5

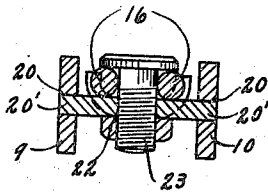


Fig. 6

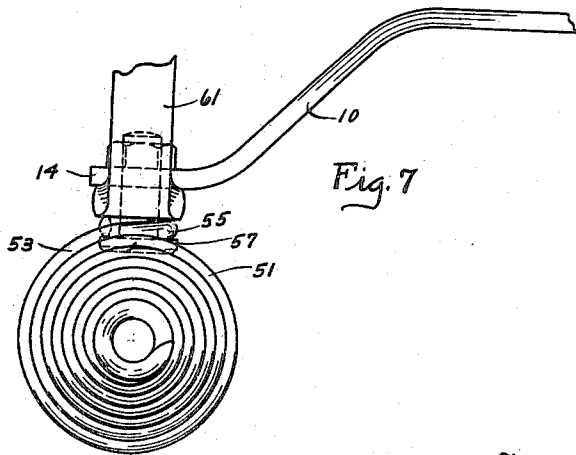


Fig. 7

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UNITED STATES PATENT OFFICE.

HARRY A. JACKSON, OF ELYRIA, OHIO, ASSIGNOR TO THE SUPERIOR METAL PRODUCTS COMPANY, OF ELYRIA, OHIO, A CORPORATION OF OHIO.

SADDLE FOR MOTOR-CYCLES OR BICYCLES.

1,229,468.

Specification of Letters Patent. Patented June 12, 1917.

Application filed August 23, 1915. Serial No. 46,843.

To all whom it may concern:

Be it known that I, HARRY A. JACKSON, a citizen of the United States, residing at Elyria, in the county of Lorain and State of Ohio, have invented certain new and useful Improvements in Saddles for Motor-Cycles or Bicycles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in saddles for bicycles, motor cycles and the like, and has for its main objects the improvements in saddles whereby more effective spring action results, better absorbing shocks, jolts, etc., thus and otherwise making riding more comfortable. The employment of my improvements makes the saddle stronger and more durable, at the same time accomplishing the above-named objects.

Another object of my invention is the employment of a plurality of flexible springs, which cooperate together to resist downward movements of the saddle seat and in returning the same to normal. Each spring can then be made flexible and at the same time, the joint actions of all realize all the advantages of a stiff spring or springs, without the disadvantages thereof. I also prefer to eliminate the tension springs which can be, and are often, stretched beyond their elastic limits, while the compression springs which I employ cannot be compressed beyond a certain amount, which is well within their elastic limits.

The parts incorporated in saddles embodying my improvements are simple and may be cheaply and conveniently manufactured with standard machinery, and when manufactured and assembled will perform their services almost indefinitely through the most severe use, without substantial deterioration or deformity of the structure as a whole.

These and other objects of my invention and the invention itself will undoubtedly be better understood from a description of an embodiment of the invention.

Figure 1 is a rear elevation of an embodiment of my invention.

Fig. 2 is a side elevation thereof showing parts in section.

Fig. 3 is a detail view.

Fig. 4 is a section through the line 4—4 of Fig. 1.

Fig. 5 is a section through the line 5—5 of Fig. 1.

Fig. 6 is a section through the line 6'—6^s of Fig. 2.

Fig. 7 is a plan view of a detail showing the connection between the truss and the spring.

Referring now to the embodiment illustrated in the drawing, at 6 is shown the seat of the saddle, which may be made of leather or other suitable material, the bottom of the saddle being preferably made of a stiffer material than the top thereof. It is usual to place cotton or some similar material between the bottom and top to make the seat softer. The saddle truss is shown generally at 8 and consists of a pair of longitudinal members 9 and 10, which extend beneath the saddle, substantially in the same direction thereto. The rear ends of these members diverge, as shown at 11 and 12. Hands 13 and 14 are formed on the rear ends of these members, preferably integral therewith. The hands are perforated for purposes to be described. The front end of the truss is connected to the other end of the saddle by suitable means. In the form illustrated this connection is effected through a resilient coil spring 15, which is formed by coiling a heavy wire whose projecting ends 16 and 17 are connected to the truss and saddle respectively. This connection permits the rear ends of the saddle seat and truss to move relatively to each other. In the form shown, the end 16 is connected to the truss by a link 18. This link is formed with wide arms 19, which enter perforations 20 in the ends of the members 9 and 10, being secured therein preferably by heading the outer ends of the arms, as shown at 20'. The link 18 is provided with a forwardly projecting arm 21, which is preferably channel-shaped. The link is provided with a perforation 22, through which a bolt 23 projects. The end of 16 is coiled about this bolt, extending along the arm 21 in the channel thereof, thus furnishing a very permanent and secure connection between the spring and the truss. A lug 24 is formed on the rear end of the link 18 to more securely hold the end 16 of the spring in position. The end 17 is connected to the saddle, preferably by extend-

ing the end 17 along the bottom of the saddle seat, as shown at 30 and 31. At 32, 33 these members diverge and are connected to the rear portion of the saddle by forming
 5 eyes 34 and 35 on the ends of said members, through which bolts 36 and 37 project, connecting the ends of the members 30 and 31 to the bottom of the saddle. Near the front of the saddle these members are connected to
 10 the bottom of the saddle through a bracket 38 and bolt 39. A cross member, here shown as a yoke, 40 is connected to the rear end of the saddle, extending substantially from one side of the saddle to the other. This
 15 member is connected by any suitable means to the bottom of the saddle. I have shown a convenient means which consists of links 41 and 42, which loop about the rod 40 and whose free ends are perforated and con-
 20 nected to the bottom of the saddle by the bolts 36 and 37.

A pair of arms 44 and 45, here shown as part of the yoke 40, extend downwardly from the saddle for purposes to be described.
 25 Spring abutments 47 and 48 are provided at the top, or adjacent the top, of these depending members and are preferably made integral therewith. Two compression springs 50 and 51 are provided, operatively connect-
 30 ed with the saddle seat and the truss, and here shown with their upper ends abutting against the spring abutments 47 and 48, and with their lower ends 52 and 53 connected to the saddle truss. In the form shown eyes
 35 54 and 55 formed on the ends of these springs and bolts 56 and 57 projecting through these eyes and the perforations in the hands 13 and 14 serve to connect the
 40 springs to the truss. The truss is connected to a saddle post (not shown), by any suitable means, such as a clamp 60. A cross piece 61, here shown as a part of the truss, is connected at either end to one of the
 45 springs and one of the member 9 and 10 by providing either end of the member 61 with a perforation 62, through which the bolts 56 and 57 project, connecting the ends of the cross member securely to the springs and the lateral truss members.

50 Spring supports, preferably in the form of chambers or cups, 70 and 71 are connected to the truss, preferably through depending arms 72 and 73, which may be made, as shown, integral with the member 61. The
 55 tops of the chambers are closed by tops 73' and 74, here shown as covers, which are fastened to the chambers in any suitable manner, such as by screws 75. The tops of these covers are perforated, as shown at 76, where
 60 the rods 44 and 45 enter the chambers. Bosses 77 are formed around these openings. Compression springs 78 are mounted in the chambers, the bottoms of the springs, 79, being operatively connected with the sup-
 65 ports 70 and 71, here shown by abutting

against the bottoms 80 of the chambers and the tops 81 of the springs operatively connected to the seat, here shown by abutting against the spring abutments 82 carried by the rods 44 and 45. These abutments are in
 70 the form shown formed with a guide 83, which is preferably made of some flexible material which serves to maintain centralized the downward pressure of the springs 78. Metallic washers 85 and 86 are connect-
 75 ed to the bottom of the rod 45 above and below the member 83. These washers are retained upon the rod by nuts 90 and 91 threaded on the rod above and below the washers. I may also employ a washer 100
 80 upon the rod to prevent any wear between the nut 91 and the cover 73' when the springs return the parts to normal.

Means are provided for maintaining the superposed springs in alinement, thus preventing their bowing or bending out at any point between their ends. These means are here shown as the cups and the guides 83 moving therein. These means overcome a difficulty experienced in saddles heretofore.
 90 When thus bowed or bent outward, the spring action is much impaired, so that the very objects of the springs are partially or wholly defeated, and the resulting structure is
 95 unsightly.

When shocks or jolts occur to the vehicle upon which the saddle is employed, the seat descends, compressing the four springs, which return the seat to normal after the shock or jolt is over. By employing a plu-
 100 rality of compression springs, I am enabled to make each spring out of flexible material and to realize the flexibility and elasticity required in saddles of this type, and at the same time retain the saddle in the proper
 105 position normally, by the joint action of all of the springs. If fewer springs of stiffer material were employed, the normal position of the saddle might be maintained, but owing to the stiffness of the springs, less
 110 flexibility and ease in riding would be realized than in the saddle of my invention.

While I have shown this particular embodiment and the details illustrating there-
 115 in, it is but done so for the purpose of illustrating and describing the invention, and not with the intention of being limited to this embodiment or these details, as it will be apparent to anyone skilled in the art that many departures may be made both
 120 from the form illustrated and the details thereof, without departing from the spirit of the invention.

I claim:—

1. In a saddle for bicycles, motor cycles
 125 and the like, the combination of a saddle seat and a saddle truss connected together at their front ends, a yoke connected to the rear end of the seat consisting of a cross bar and a pair of depending arms, a compres-
 130

sion spring surrounding each arm operatively connected at one end with the yoke and at the other with the truss and adapted to compressingly yield when excessive pressure is applied to the seat or truss and to expand to normal when such pressure is released, a second pair of compression springs, each having at one end operative connection with the yoke arm and a support for each of said second springs mounted on the truss, said second pair of compression springs also adapted to compressingly yield when excessive pressure is applied to the seat or truss and to expand to normal when released.

2. In a saddle for bicycles, motor cycles and the like, the combination of a saddle seat and a saddle truss, means to connect the front end of the truss to the front end of the seat, a pair of compression springs operatively connected at one end to the seat and at the other end to the truss and adapted to compressingly yield when excessive pressure is applied to the seat or truss and to expand to normal when released, a pair of arms depending from said seat, a second pair of compression springs each operatively connected at one end to one of said arms, supports for the other ends of said compression springs mounted on the truss, said springs adapted to compressingly yield between the truss and seat when excessive pressure is applied to either the truss or seat and to expand to normal when said pressure is released.

3. In a saddle for bicycles, motor cycles and the like, the combination of a saddle seat and a saddle truss, means to connect the front end of the truss to the front end of the seat, a pair of compression springs operatively connected at one end to the seat and bolted at the other end to the truss, said springs adapted to compressingly yield when excessive pressure is applied to either the truss or the seat and to expand to normal when such pressure is released, a pair of depending arms connected to the rear part of the seat, a second pair of compression springs each operatively connected at one end to one of said arms and depending supports for the other ends of said compression springs connected to said truss, said second pair of compression springs being also compressed when excessive pressure is applied either to the truss or the seat and adapted to expand when such pressure is released.

4. In a saddle for bicycles, motorcycles and the like, the combination of a saddle seat and a saddle truss, means to connect the front end of the truss to the front end of the seat, a yoke connected to the rear end of the seat consisting of a cross bar and a pair of vertical depending arms, a pair of coil compression springs, each connected at one end to the truss, each surrounding one of said arms and operatively connected at the

other end with the yoke, said springs adapted to compressingly yield when excessive pressure is applied either to the seat or truss and to expand to normal when such pressure is released, a second pair of compression springs, each operatively connected at one end to one of said depending arms and supports depending from said truss for the other ends of said second pair of compression springs, said second pair of compression springs adapted also to compressingly yield when excessive pressure is applied to either the seat or truss and to expand when such pressure is released.

5. In a saddle for motorcycles, bicycles or the like, the combination of a saddle seat and a saddle truss, means to connect the front ends of said truss and said seat together, a pair of depending spring supports one connected to each of the rear corners of said truss, a pair of vertically depending arms one connected to each of the rear corners of said seat, a pair of compression springs, each supported at one end from said support and operatively connected at the other end to the lower end of said arm, and a second pair of compression springs surrounding said arms, each operatively connected at one end to said truss and at the other end to the upper end of one of said depending arms.

6. In a saddle for motor cycles, bicycles or the like, the combination with a saddle seat and a saddle truss, means connecting the front ends of said seat and said truss together, permitting the rear ends thereof to move with respect to each other, and two pairs of superposed compression springs between the saddle seat and truss, each connected to the truss independently of the others and all serving to resist downward movement of the saddle seat.

7. In a saddle for motor cycles, bicycles or the like, the combination of a saddle seat and a saddle truss, means to connect the front ends of said seat and truss together, permitting relative movement of the rear ends, a plurality of interposed compression springs mounted one above the other and each independently connected to both the saddle and the truss and both serving to resist downward movement of the saddle seat.

8. In a saddle for bicycles, motor cycles or the like, the combination with a saddle seat and a saddle truss, two pairs of interposed compression springs mounted one pair above the other and each independently connected to the truss and all serving to resist downward movement of the saddle seat.

9. In a saddle for motor cycles, bicycles and the like, the combination of a saddle seat and a saddle truss connected together at their front ends, a vertically depending arm connected to the rear end of the saddle, a pair of superposed compression springs each connected at its upper end to the arm and

each connected at its lower end to the truss and both serving to resist downward movement of the saddle seat.

10. In a saddle for bicycles, motor cycles or the like, the combination with a saddle seat, a saddle truss connected to said seat at the front end thereof, a pair of vertically depending arms connected to the seat, two compression springs operatively connected at their upper ends to the lower ends of the said depending arms and at their lower ends with said truss and two additional compression springs operatively connected at their upper ends to the upper ends of the arms and at their lower ends to the truss.

11. In a saddle for bicycles, motor cycles or the like, the combination with a saddle seat, of a saddle truss comprising a pair of laterally extending members and a transverse member connected at each end to the rear end of one of the lateral members, means to connect the front end of the truss to the front end of the seat, permitting relative movement of the rear end of the seat and truss, a yoke connected to the rear end of the seat provided with a vertically depending arm on each end thereof, a pair of compression springs, each operatively connected at its upper end to the lower end of one of the depending arms, a pair of supports each depending from one of the ends of said cross member and forming a support for the lower end of one of said springs, a second pair of compression springs, each surrounding one of said depending arms and connected at its lower end to the truss and at its upper end to the upper end of one of said arms, all of said springs serving to resist downward movement of the saddle seat.

12. In a saddle for motor cycles, bicycles or the like, the combination of a saddle seat and a saddle truss connected together at their front ends, a pair of cylindrical chambers each rigidly connected to and suspended from one of the rear corners of the truss, a pair of vertically depending arms each connected at one end to a rear corner of the seat and extending through the top of one of said chambers into the same, a pair of compression springs one in each of said chambers, resting at one end on the bottom thereof and bearings in said chambers for the upper ends of said springs mounted on the lower ends of said depending rods.

13. In a saddle for motor cycles, bicycles or the like, the combination of a saddle seat and a saddle truss connected together at their front ends, a pair of cylindrical chambers each suspended from one of the rear corners of the truss, a pair of vertically depending arms each connected at one end to a rear corner of the seat and extending through the top of one of said chambers into the same, a pair of compression springs one in each of said chambers, resting at one end

on the bottom thereof and bearings in said chambers for the upper ends of said springs mounted on the lower ends of said depending rods, and a second pair of compression springs surrounding said rods, each operatively connected at one end to the seat and at the other end to the truss.

14. In a saddle for motor cycles, bicycles or the like, the combination of a saddle seat and a saddle truss, means to connect said seat and truss together at their front ends permitting relative movements of the rear ends thereof, said truss comprising a pair of laterally extending members and a transverse member connected at each end to the rear end of one of the laterally extending members, a pair of cylindrical chambers, each rigidly connected to one end of said transverse member and suspended therefrom, a yoke connected to the rear end of the seat provided with a pair of vertically depending arms, each extending through the top of one of said chambers and into the same, a pair of compression springs, one in each of said chambers resting with its lower end on the bottom thereof and a pair of bearings, each engaging the top of one of said compression springs, said bearings being each mounted upon the lower end of one of said depending arms and each being inclosed within one of said chambers.

15. In a saddle for motor cycles, bicycles or the like, the combination of a saddle seat and a saddle truss, means to connect said seat and truss together at their front ends permitting relative movements of the rear ends thereof, said truss comprising a pair of laterally extending members and a transverse member connected at each end to the rear end of one of the laterally extending members, a pair of cylindrical chambers, each connected to one end of said transverse member and suspended therefrom, a yoke connected to the rear end of the seat provided with a pair of vertically depending arms, each extending through the top of one of said chambers and into the same, a pair of compression springs, one in each of said chambers resting with its lower end on the bottom thereof and a pair of bearings, each engaging the top of one of said compression springs, said bearings being each mounted upon the lower end of one of said depending arms and each being inclosed within one of said chambers, and a second pair of compression springs, each operatively connected at one end with said seat and at the other end with said truss.

16. In a saddle for bicycles, motor cycles or the like, the combination of a saddle seat, a saddle truss, means to connect the front ends of the seat and truss together, said truss comprising a pair of longitudinal members and a transverse member, an arm depending from each end of the transverse

member, a cylindrical chamber rigidly connected to each of said arms, a pair of arms depending from said seat, one of said arms extending through the top of each chamber into said chamber and a pair of compression springs between the seat and truss serving to resist downward movements of said seat.

17. In a saddle for bicycles, motor cycles and the like, the combination of a saddle seat and a saddle truss, a pair of depending arms connected at one end to the seat, a pair of cups into which said arms project, a pair of arms depending from the truss and rigidly connected to the sides of the cups and compression springs between the seat and truss serving to resist downward movements of the seat.

18. In a saddle for bicycles, motorcycles and the like, the combination of a saddle seat and a saddle truss, superposed springs between said seat and truss and means including a cup member and guide member movable therein to maintain said springs in alinement when in operation, one of said

members being carried by the seat and the other by the truss.

19. In a saddle for bicycles, motorcycles or the like, the combination of a saddle seat and a saddle truss, superposed springs therebetween adapted to yield when said seat and truss are moved toward each other, a rod connected to the seat and movable therewith, passing through one of said springs, a guiding member on said rod and a second guiding member on said truss supporting the second spring, said members cooperating to maintain said springs in alinement when in operation.

20. In a saddle for bicycles, motorcycles or the like, the combination with a saddle seat and a saddle truss, two pairs of superposed compression springs interposed with respect to the seat and truss and means to connect each spring to the seat and truss, and all serving to resist downward movement of the saddle seat.

I have hereunto signed my name this 3rd day of August, 1915.

HARRY A. JACKSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."