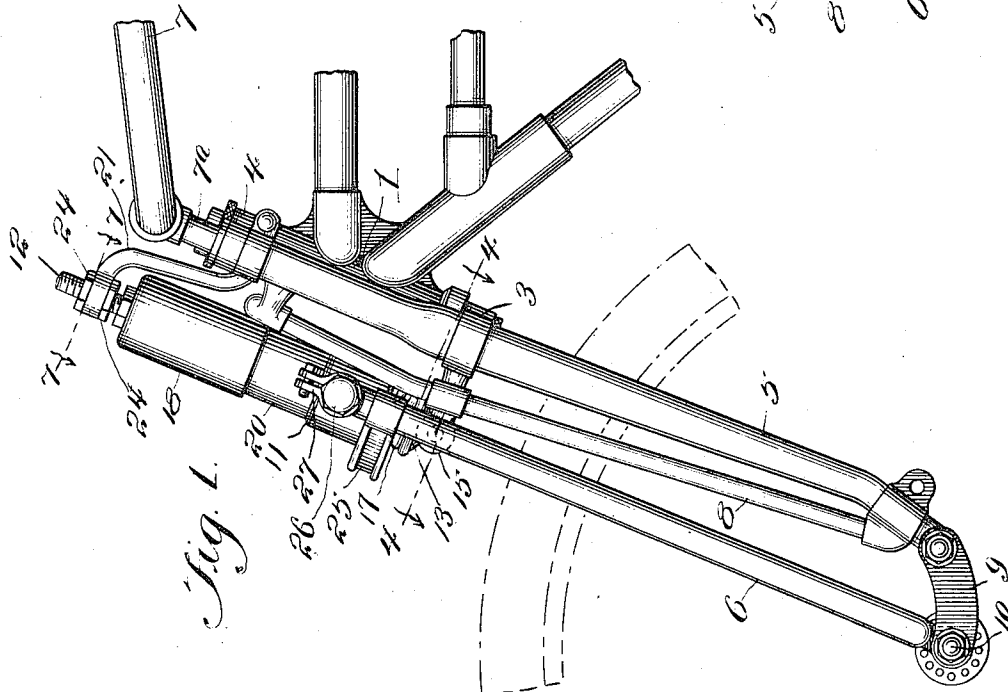
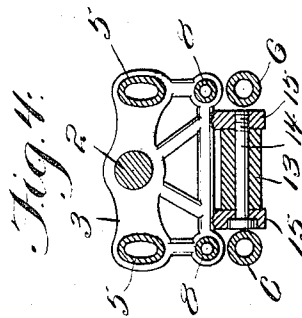
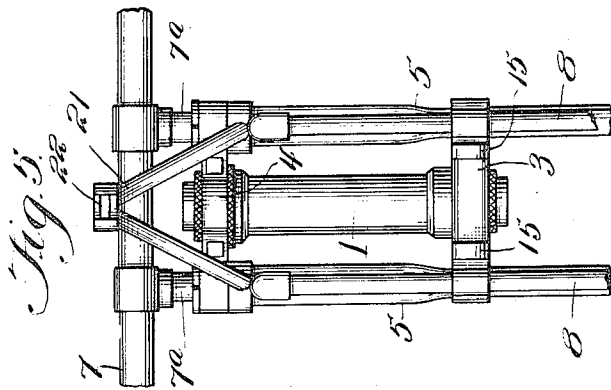


A. O. FEILBACH.
 SPRING FORK FOR MOTOR CYCLES.
 APPLICATION FILED AUG. 23, 1912.

1,052,808.

Patented Feb. 11, 1913.
 2 SHEETS—SHEET 1.



Inventor
 Arthur O. Feilbach

Witnesses
 J. L. Wright
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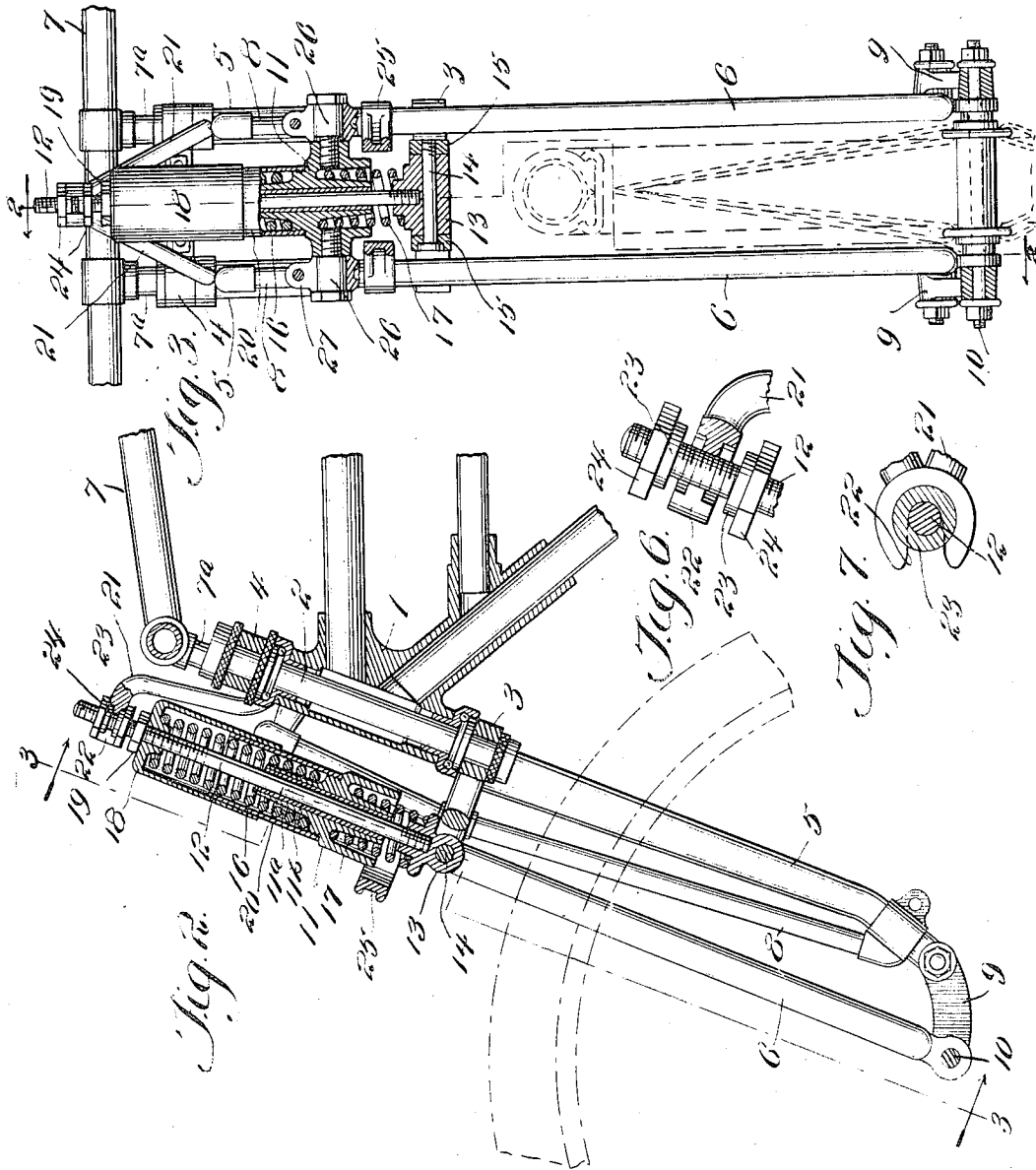
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UNITED STATES PATENT OFFICE.

ARTHUR O. FEILBACH, OF NORTH MILWAUKEE, WISCONSIN, ASSIGNOR TO FEILBACH MOTOR COMPANY, OF MILWAUKEE, WISCONSIN, A CORPORATION OF WISCONSIN.

SPRING-FORK FOR MOTOR-CYCLES.

1,052,808.

Specification of Letters Patent.

Patented Feb. 11, 1913.

Application filed August 23, 1912. Serial No. 716,683

To all whom it may concern:

Be it known that I, ARTHUR O. FEILBACH, a citizen of the United States, residing at North Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Spring-Forks for Motor-Cycles, of which the following is a specification.

The present invention provides a novel form of spring fork for velocipedes and kindred machines embodying in their structure a fork in which the steering wheel is mounted and specifically the invention is intended to supply a spring fork designed most especially for motor cycles so as to relieve jar and shock alike both to the machine and the rider, particularly when passing over rough roads and objects in the path of the machine.

The invention provides a fork which while yieldable is substantial and durable and capable of adjustment so that the tension of the spring may be regulated to suit the weight of the machine and rider, thereby enabling the full benefits of the spring fork to be obtained.

The invention consists of the novel features, details of construction and combination of parts, which hereinafter will be more particularly set forth, illustrated in the accompanying drawings, and pointed out in the appended claims.

Referring to the drawings, forming a part of the specification, Figure 1 is a side view of a spring fork designed for motor cycles. Fig. 2 is a vertical longitudinal section of the fork on the line 2—2 of Fig. 3, looking in the direction of the arrows. Fig. 3 is a vertical transverse section on the line 3—3 of Fig. 2, looking to the rear, as designated by the arrows. Fig. 4 is a horizontal section on the line 4—4 of Fig. 1. Fig. 5 is a front view of the fork having the spring fork omitted and the lower portions of the rigid fork and truss braces broken away. Fig. 6 is a detail view of the upper end of the crown supporting rod and bracket, showing the connecting means. Fig. 7 is a horizontal section on the line 7—7 of Fig. 1, showing the parts on a larger scale.

Corresponding and like parts are referred to in the following description, and indicated in all the views of the drawings, by the same reference characters.

The numeral 1 designates the head tube

of the machine frame in which the steering post 2 is mounted, said post being connected at its lower end to a yoke 3 and at its upper end to a crown 4. The steering post has ball bearings interposed between its end portions and corresponding parts of the head tube. The mount or support for the steering wheel comprises a rigid fork 5 and a spring fork 6, the members of the rigid fork passing through openings of the yoke 3 and secured at their upper ends in the crown 4. The handle bar 7 has two stems 7^a which telescope with the upper ends of the members of the rigid fork 5, the same being secured therein at the adjusted position by clamps or other well known fastening means. Truss braces 8 are secured at their ends to the upper and lower portions of the members of the rigid fork 5 and pass through openings formed in the yoke 3, said truss braces being forwardly deflected in the plane of the yoke. The members of the spring fork are pivotally connected at their lower ends to links 9, which in turn are pivotally connected to the lower ends of the members of the rigid fork 5. The axle upon which the steering wheel is mounted is supported in the lower ends of the members of the spring fork 6 and passes through openings formed in the front ends of the links 9. The upper ends of the spring fork members 6 are connected to a crown 11, which is slidably mounted upon a rod 12 having connection at its lower end with the yoke 3 by means of a T fitting 13 mounted upon a pin 14, which is supported in ears 15 projecting forwardly from and forming a part of the yoke 3. The rod 12 receives a compression spring 16 and a buffer spring 17, the latter being confined between the spring fork crown 11 and the fitting 13 and the compression spring being confined between the spring fork crown 11 and a part 18 mounted upon the upper end of the rod 12 and confined thereon in an adjusted position by means of a nut 19. The middle portion of the spring fork crown 11 is extended vertically to form a bearing sleeve 11^a in which the rod 12 is mounted, a bushing 11^b being interposed between the rod 12 and bearing sleeve to sustain the wear. The lower side of the crown 11 is recessed to receive the upper end of the buffer spring 17, which is housed and centered thereby. A casing incloses the compression spring 16

and upper portion of the rod 12 and comprises the part 18 and a part 20, the latter being a tube which is threaded at its lower end to the spring fork crown 11 and telescopes at its upper end with the part 18, also a tube, and closed at its upper end.

The rod 12 extends above the casing and is threaded and makes detachable connection with a bracket 21, which is forked and has its fork members attached to the upper ends of the fork members 5. The upper end of the bracket 21 has a forwardly extending opening 22 to receive the rod 12. The inner end of the opening 22 is enlarged at the top and bottom to receive extensions 23 of nuts 24 mounted upon the rod 12, so as to retain it in place in the bracket. By backing the nut 24 the rod 12 may be swung forward clear of the bracket 21 to admit of ready access to the parts mounted upon said rod. A yoke 25 connects the upper ends of the fork members 6 to form a substantial structure. The spring fork 6 has its members pivotally connected with the crown 11 to admit of the free to and fro movement of such fork at its lower end. Pins 26 are let into the ends of the crown 11 and receive split bearings 27 at the upper ends of the fork members 6.

It is noted that the weight and strain are sustained by the yoke 3 and transferred to the spring fork 6 through the rod 12, compression spring 16 and crown 11. When the steering wheel passes over an obstruction the spring fork 6 and crown 11 move upward, thereby compressing the spring 16 and on the rebound the buffer spring 17 absorbs the shock, thereby preventing the same being transferred to the frame of the machine. By proper adjustment of the set nut 19 the tension of the spring 16 may be regulated to suit the weight of the rider so as to obtain the best results. The truss braces 8 besides stiffening and strengthening the two forks also brace the yoke 3, thereby enabling it to withstand the strain and shock to which it is subjected in service.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims appended hereto.

Having thus described the invention what is claimed as new, is:—

1. A fork for a velocipede or like machine comprising fork members, upper and lower connecting members between the upper por-

tions of the fork members, a steering post intermediate of the fork members and supported in said connecting pieces, and truss braces having their end portions connected to the upper and lower ends of the fork members and forwardly deflected intermediate of their ends and connected with the lower connecting piece between the fork members.

2. A steering fork for velocipedes and like machines comprising fork members, a crown connecting the upper ends of the fork members, a yoke connecting the fork members a distance from the crown, a steering post supported in said crown and yoke, and truss braces having connection at their upper and lower ends with corresponding parts of the fork members and having connection intermediate of their ends with the said yoke.

3. Supporting means for the steering wheel of a velocipede or like machine comprising a rigid fork, a spring fork, links pivotally connecting the lower ends of the members of the two forks, a yoke having rigid connection with the rigid fork, a crown connecting the spring fork members, a rod having pivotal connection with the yoke and sliding connection with the spring fork crown, and a spring interposed between the spring fork crown and a stop mounted upon said rod.

4. Supporting means for the steering wheel of a velocipede or like machine comprising a rigid fork, a yoke having connection with the rigid fork, a spring fork, links pivotally connecting the lower ends of both fork members, a crown connecting the spring fork members, a rod having pivotal connection with said yoke and having the spring fork crown slidable thereon, and springs arranged above and below the said spring fork crown and exerting a pressure thereon.

5. In supporting means for the steering wheel of a velocipede or like machine, the combination of a rigid fork, a yoke having connection with the rigid fork, a spring fork, links pivotally connecting the lower ends of both fork members, a crown connecting the spring fork members, a rod passing loosely through said crown and having pivotal connection with the said yoke, a buffer spring mounted upon the rod between the spring fork crown and the connecting means between the rod and yoke, and a compression spring confined upon the upper portion of the rod and exerting a downward pressure upon the spring fork crown.

6. In combination a rigid fork, a crown connecting the upper ends of the fork members, a yoke connecting said fork members a distance from the crown, a steering post supported at its ends in the yoke and crown, truss braces having their ends connected with the fork members and secured inter-

mediate of their ends to the yoke, a spring fork, links connecting the lower ends of both fork members, a crown connecting the members of the spring fork, a fitting having pivotal connection with said yoke, a rod passing loosely through the spring fork crown and secured at its lower end to said fitting, a buffer spring mounted upon the rod between the said fitting and spring fork crown, a set nut mounted upon the upper portion of said rod, a compression spring mounted upon the rod between the set nut and spring fork crown, and a cap inclosing the compression spring and upper portion of the rod.

7. In combination a rigid fork, a spring fork, a link connection between the lower ends of the two forks, a yoke connecting the upper ends of the rigid fork members, a bracket having connection with the upper end of the rigid fork, a rod supported by means of the before mentioned yoke and bracket, a crown slidable upon said rod and having the upper ends of the spring fork members pivotally connected thereto, and cushioning means for the said crown for relieving the shock and vibration.

8. In combination a rigid fork, a spring fork, a link connection between the lower ends of the two forks, a yoke forming connecting means between the upper ends of the rigid fork members, a bracket having connection with the rigid fork, a rod having pivotal connection at its lower end with the before mentioned yoke and having detachable connection at its upper end with the said bracket, a crown slidably mounted on said rod and having the upper end of the spring fork pivotally connected therewith, and cushioning means for said crown for sustaining and absorbing shock.

9. In combination a rigid fork, a spring fork, a link connection between the lower ends of the two forks, a yoke having connection with the upper end of the rigid fork, a bracket at the upper end of the rigid fork, a rod having pivotal connection at its lower end with the said yoke and detachably

connected at its upper end with the said bracket, a crown slidably mounted upon said rod and having the spring fork pivotally connected therewith, cushioning means mounted upon the said rod between the crown and bracket, and a casing for inclosing said cushioning means and comprising telescoping parts.

10. In combination rigid and spring forks, a rod having connection with the rigid fork, a crown slidably mounted upon said rod and having the spring fork connected therewith, cushioning means mounted upon the rod and exerting a downward pressure upon the said crown, a casing for inclosing the cushioning means comprising telescoping parts, the lower one of which has connection with the said crown, and a set nut threaded upon the said rod to limit the upward movement of the upper part of the said casing and to regulate the tension of the cushioning means.

11. In combination a rigid fork, a spring fork, a yoke forming connecting means between the upper ends of the rigid fork members, a bracket having connection with the rigid fork and having its upper end formed with a forwardly extending opening which is enlarged at its top and bottom, a rod having pivotal connection with the before mentioned yoke and having its upper portion threaded and adapted to enter or leave the opening formed in the before mentioned bracket, nuts mounted upon the threaded end of the rod and having extensions to enter the enlarged portions of the opening of said bracket to retain the rod in place, a crown slidable upon the rod and having the spring fork pivotally connected therewith, and cushioning means mounted upon the rod and adapted to sustain the shock and load.

In testimony whereof I affix my signature in presence of two witnesses.

ARTHUR O. FEILBACH.

Witnesses:

JOHN F. JACKSON,
AL. HEUEL.