

No. 779,709.

PATENTED JAN. 10, 1905.

C. O. HEDSTROM.
SPRING FORK FOR VEHICLE WHEELS.
APPLICATION FILED JUNE 14, 1904.

Fig. 1.

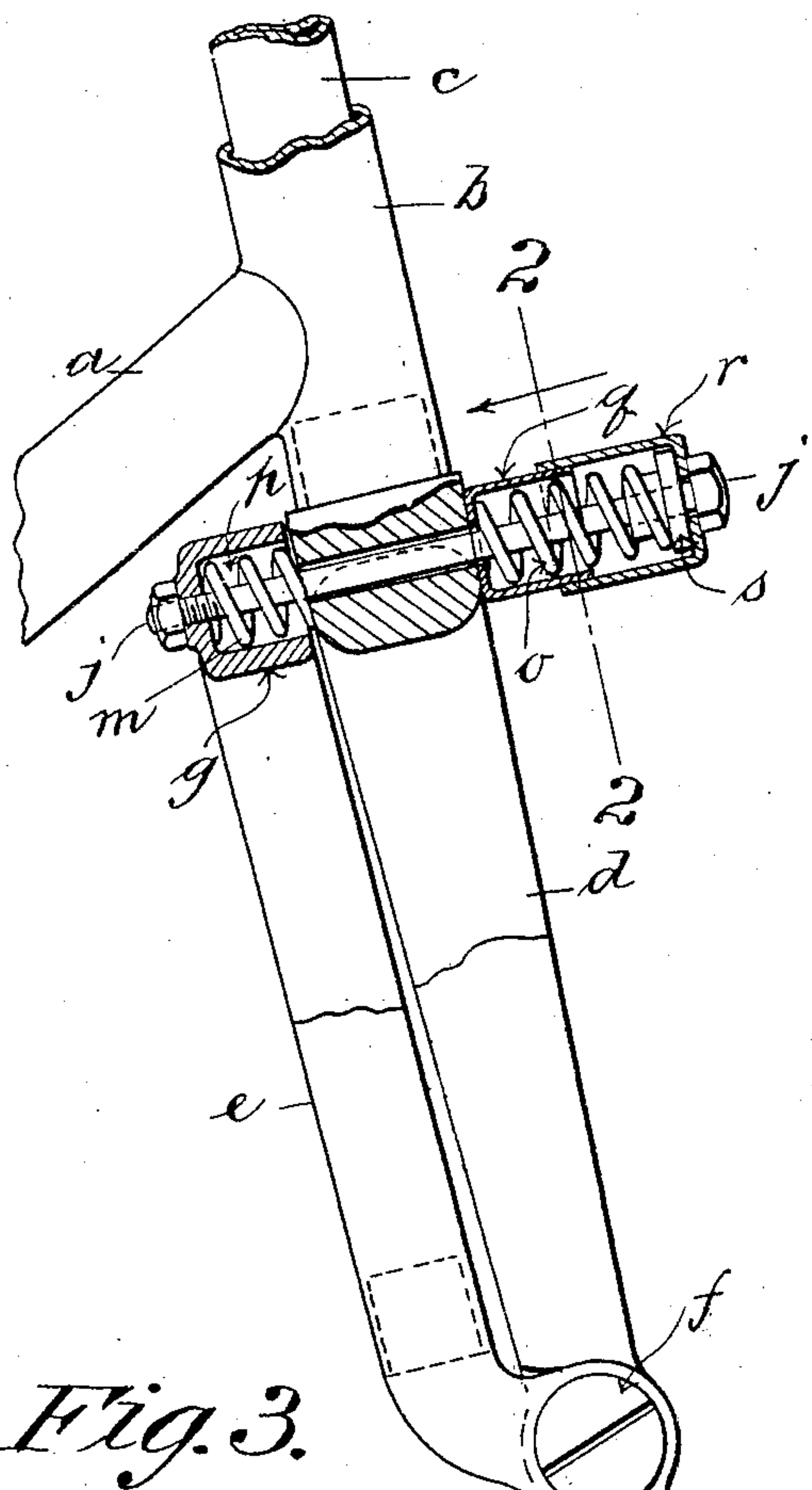


Fig. 2.

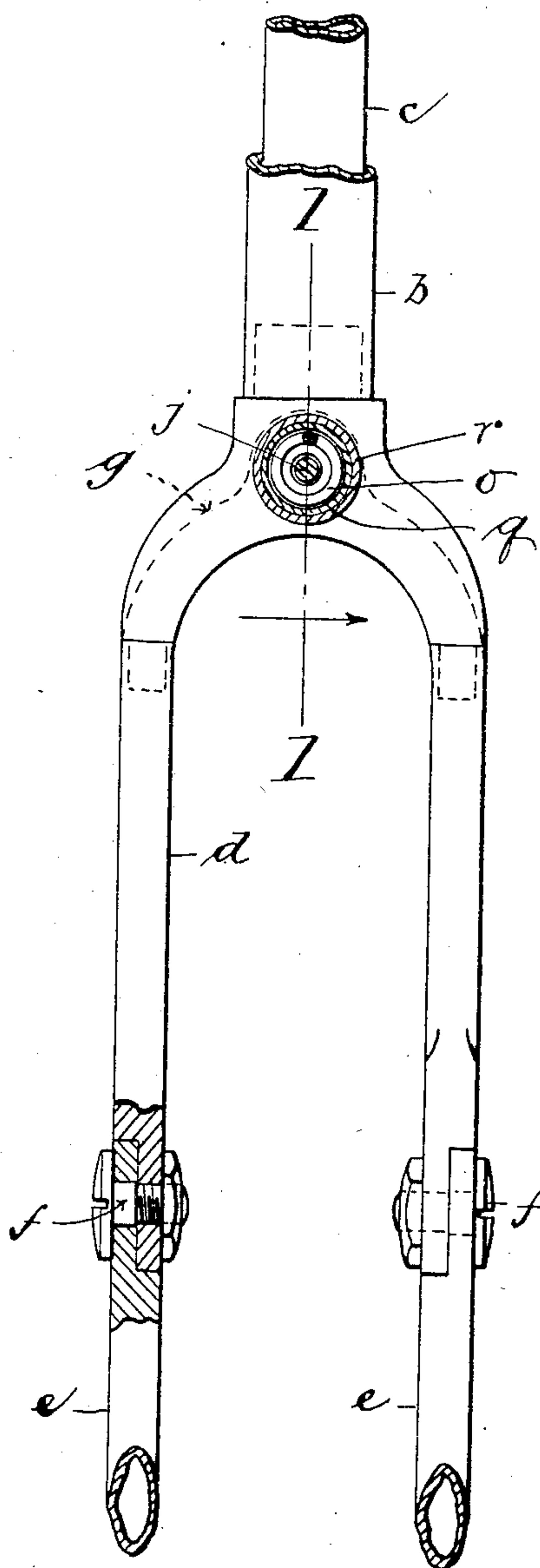
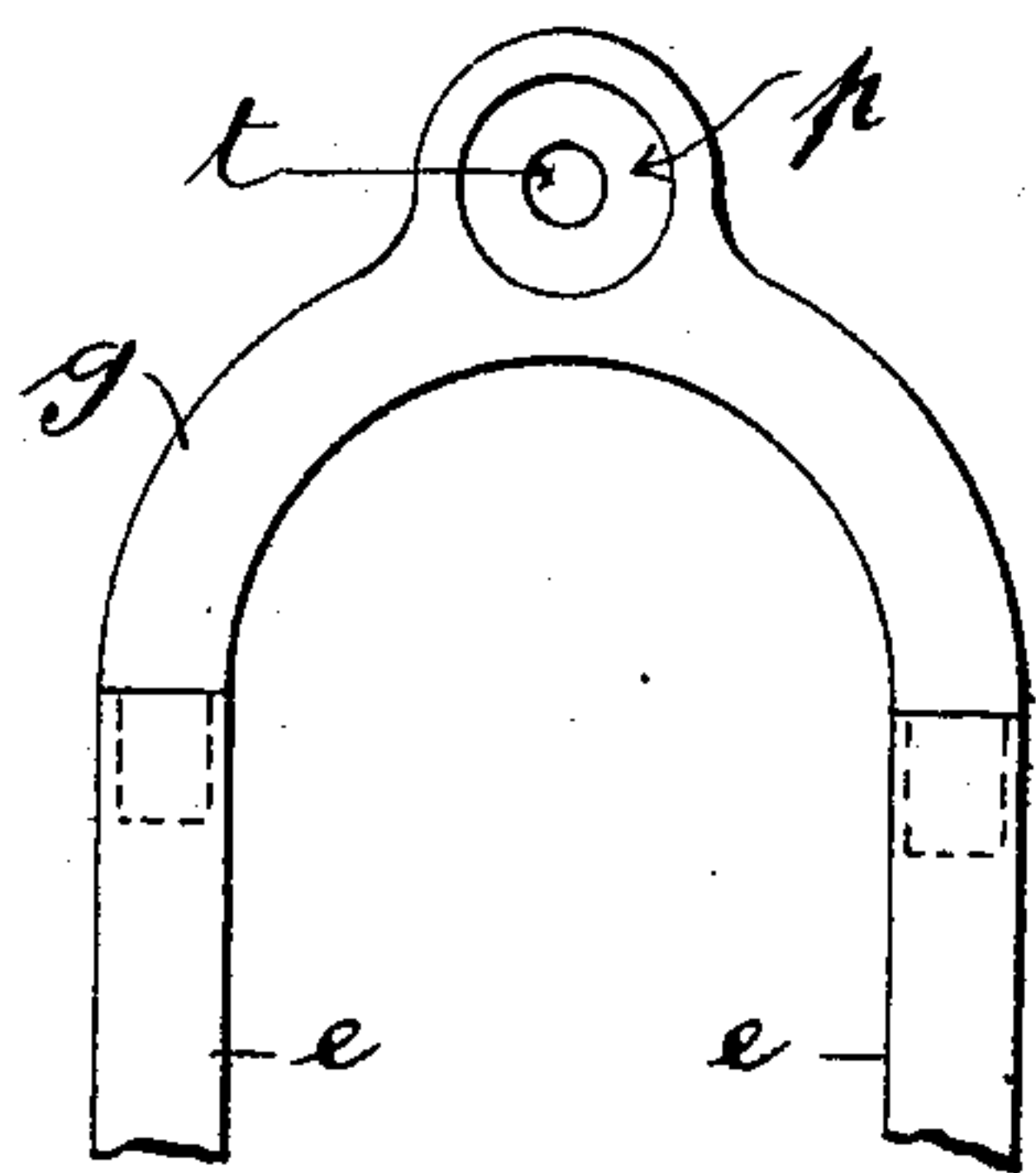


Fig. 3.



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UNITED STATES PATENT OFFICE.

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SPRING-FORK FOR VEHICLE-WHEELS.

SPECIFICATION forming part of Letters Patent No. 779,709, dated January 10, 1905.

Application filed June 14, 1904. Serial No. 212,485.

To all whom it may concern:

Be it known that I, CARL O. HEDSTROM, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Spring-Forks for Vehicle-Wheels, of which the following is a specification.

This invention relates to bicycle construction, and specifically to the construction of a spring-fork for vehicles of this class, the object of the invention being to provide a spring-fork especially adapted to motor-cycle construction to relieve the head of the frame of the great strain to which the latter is subjected, due to the vibration imparted thereto when the machine is run over any but the smoothest roads, the fork being so constructed as to permit its swinging in opposite directions against the tension of suitable springs in the plane of the movement of the vehicle.

Having these ends in view, the invention consists in a fork made in two pieces hinged together between the crown and the ends of the fork, the lowermost portion extending upward above the hinge alongside the other portion of the fork and being clamped thereto yieldingly in such manner that the movement of the lower portion of the fork relative to the upper will be against the tension of the spring.

In the drawings forming part of this application, Figure 1 is a side elevation of a fork constructed according to this invention, several of the parts being shown in section in the plane of line 1 1, Fig. 2. Fig. 2 is a front elevation, certain of the parts being shown in section in the plane of line 2 2, Fig. 1. Fig. 3 is a front elevation of the upper end of the swinging fork member.

Referring to the drawings, *a* is a portion of the frame of the machine, *b* being the head thereof, through which the shank *c* of the fork *d* extends. This fork is of the same construction as all front forks of bicycles except that the fork ends are shorter, and at the extremity of the fork ends another fork-section, *e*, is pivotally secured by means of bolts *f f*. The lower portion of said fork-section *e*, below the

pivotal point thereof, (when viewed from one side, as in Fig. 1,) constitutes to all intents and purposes a continuation of the fork *d* above it. The portion above the pivotal point *f*, however, of the fork-section *e* trends backwardly from said point and then upwardly and terminates in a crown *g*, as shown in Fig. 3 in front elevation, this section *e* constituting a complete fork. The shape of the upper end of the fork-section *e* is practically the same as that of the fork *d*, so that when viewed from the front the structure is practically the same in appearance as the solid fork of the well-known construction. The free ends of the fork-section *e* receive the front wheel of the vehicle in the usual manner, and it is to be observed that a vertical line let fall through the axis of this wheel, which would be the point *h*, is well forward of the pivotal point *f*, and the tendency, therefore, of the upper end of the fork-section *e* will be to swing away from the position shown in Fig. 1 back of the fork-sleeve when the vehicle stands on its wheels. The fork-sections *d* and *e*, however, are united yieldingly, as follows: A bolt *j* extends through a hole in the crown of the fork *d* and through the upper end of the fork-section *e*, as shown in Figs. 1 and 2, a spring being applied on either side of the fork *d*, that on the rear side being indicated by *m* and that on the forward side by *o*. The spring *m* is located in a socket *p*, formed in the crown *g*, and the spring *o* is located within two telescoping cups or tubes *q* and *r*, having closed ends. As shown clearly in Fig. 1, the bolt *j* has a head thereon at one end against which the cup *r* abuts, and on the bolt within said cup a collar *s* is preferably fitted, between which and the head of the bolt the cup *r* is confined. The other cup, *q*, has a hole bored through it to receive the bolt and is fitted over the latter after the cup *r* has been secured thereon and the spring *o* introduced into the cup, the spring being thus confined between the ends of said cups and inclosed thereby. The free end of the bolt is then passed through the hole in the crown of the fork *d* and the spring *m* slipped over the end of the bolt, the upper end of the fork-section *e* being then

swung toward the fork *d*, the end of the bolt passing through the hole *t* in the end of the socket *p* and a nut screwed onto the bolt.

The spring *m* is so proportioned as to extend normally out of the socket *p* to the end that when the nut on the end of the bolt *j* is screwed up this spring may be compressed, and when the parts are in their normal operative position the spring *o* will also be under more or less compression, to the end that the upper end of the fork-section *e* will be so supported that whichever way the lower end may be swung it will be against the resistance of one or the other of the springs *m* or *o*. The spring *o*, however, is that whose action is relied upon more particularly to take up the vibrations which otherwise would be imparted to the frame, for the reason that the wheel of the vehicle being supported, as it is, forwardly of the pivotal point *f* when any unevenness of the road is passed over by the wheel the lower end of the fork will spring upward and the upper end of the fork will swing back in a direction to compress the spring *o*, whereupon the spring *m* will be relieved, and when the fork swings back in normal position again this last-named spring will act as a buffer-spring, which will prevent the upper end of the fork-section *e* from striking the fork *d*, and in this way the action of the parts will be noiseless.

Preferably at that point where the fork-section *e* is pivotally united to the fork *d* a mortise-joint is made, as shown in section in

Fig. 2, whereby greater strength is assured, and this form of joint also permits the true alinement of the two fork-sections.

Obviously the two telescoping cups *q* and *r* are not at all essential to the proper operation of the device, but are merely supplied to cover the spring *o*. The other spring, *m*, being similarly inclosed in the socket *p* gives the whole construction a finished appearance and prevents the accumulation of dirt in the springs.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

A wheel-supporting fork consisting of one fork portion supported in the frame, a second and longer fork portion pivotally supported between the ends of the first-named portion and constituting a continuation thereof, the upper ends of said two fork portions lying one next to the other; a bolt extending loosely through the crown of said shorter portion and engaging by one end the crown of the longer portion, a spring located in a recess in the latter and bearing against one side of the shorter portion; a second spring located between the opposite side of the shorter portion and the end of the bolt, and two telescoping tubes to inclose said second spring.

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Witnesses:

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