No. 679,565. Patented July 30, 1901.

D. W. JUDSON.

BICYCLE FRAME.

(Application filed Feb. 27, 1901.)

(No Model.)

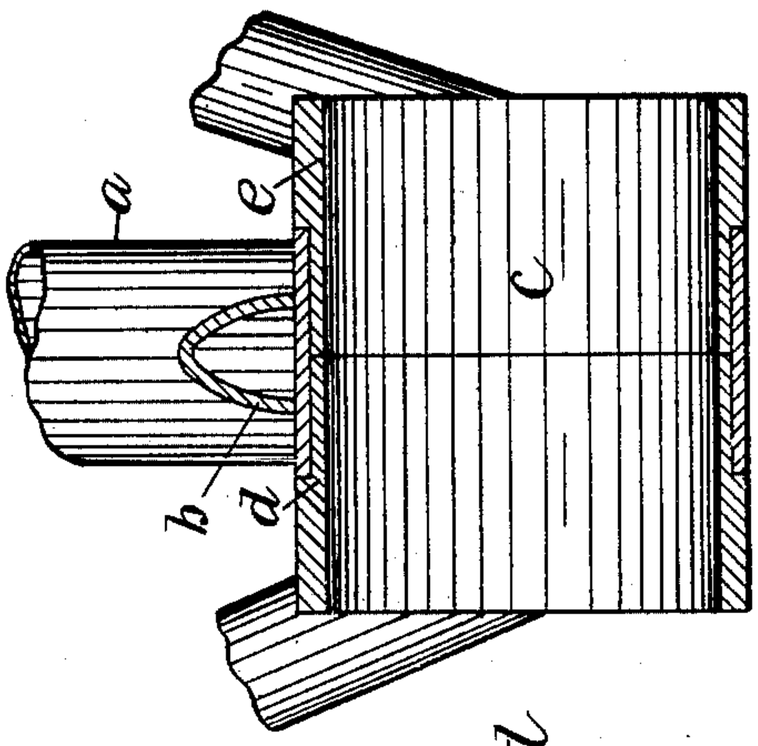

Fig. 2.

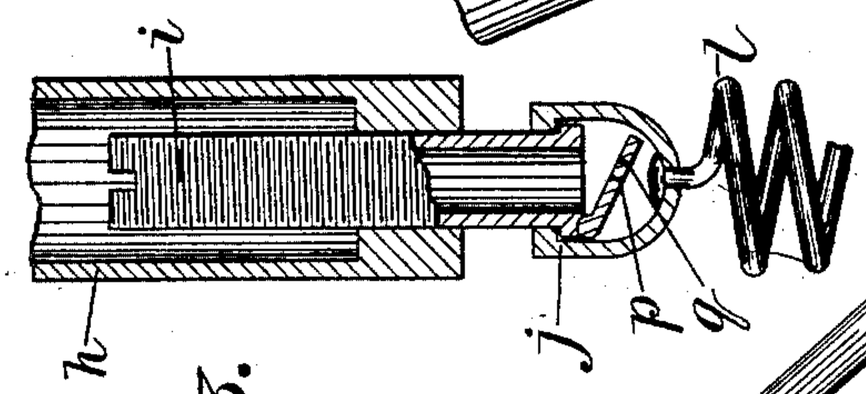

Fig. 3.

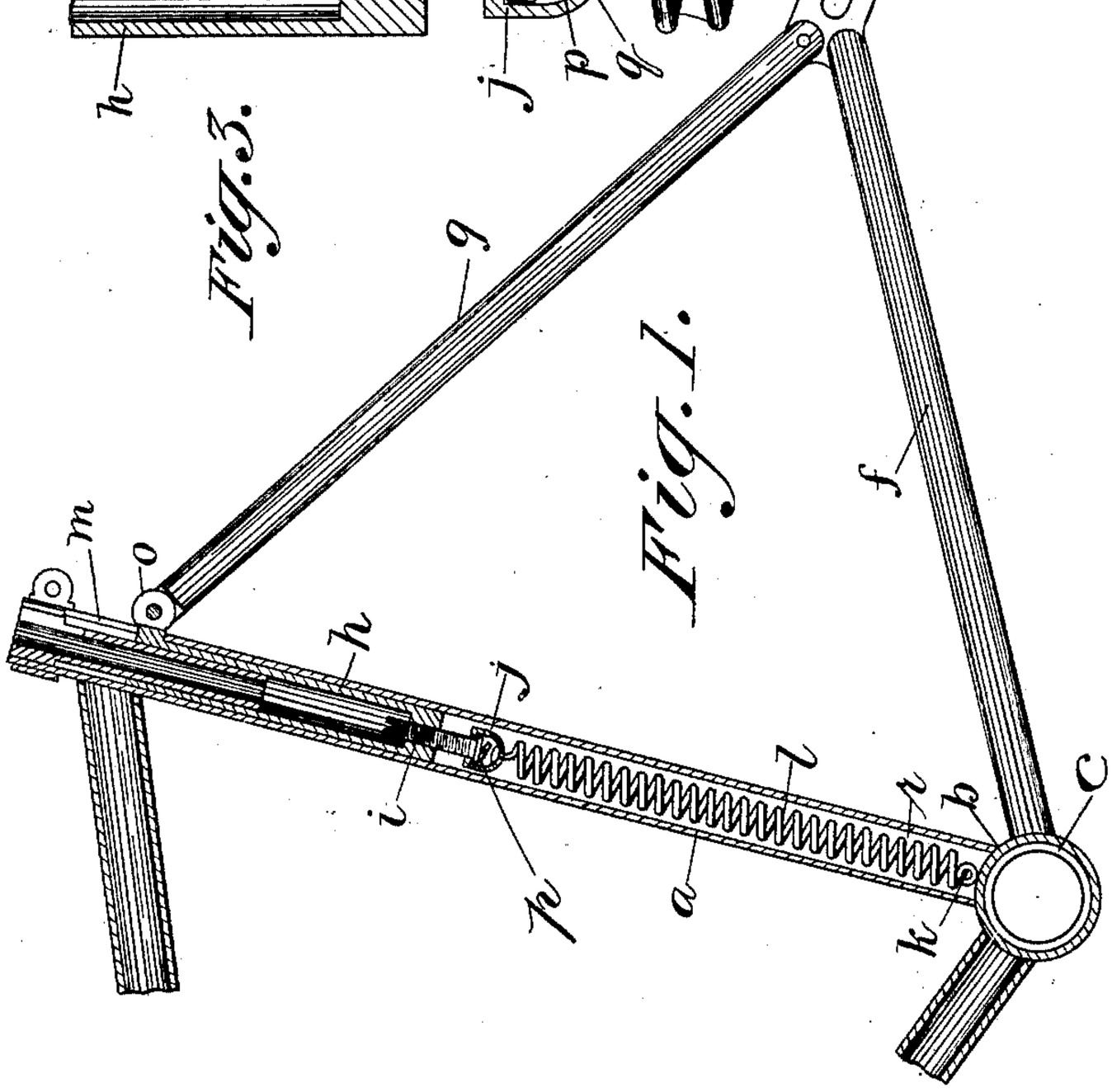

Fig. 1.

Witnesses.
L. F. Brock.
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Dalas W. Judson
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UNITED STATES PATENT OFFICE.

DALUS W. JUDSON, OF BARRIE, CANADA.

BICYCLE-FRAME.

SPECIFICATION forming part of Letters Patent No. 679,565, dated July 30, 1901.

Application filed February 27, 1901. Serial No. 49,144. (No model.)

To all whom it may concern:

Be it known that I, DALUS W. JUDSON, of Barrie, in the county of Simcoe, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Bicycle-Frames; and I hereby declare that the following is a full, clear, and exact description of the same.

This invention relates to certain new and useful improvements in that class of bicycle-frames in which the rear forks oscillate to relieve the frame of vibratory motion during the progress of the vehicle; and the object of the invention is to so arrange the frame that the movable parts to which the rear forks are connected will be entirely concealed; and the invention consists, essentially, of the device hereinafter more fully set forth, and more particularly pointed out in the claims.

In the drawings, Figure 1 is a vertical section of a portion of a bicycle-frame. Fig. 2 is a section taken through the center of the crank-axle bracket at right angles to Fig. 1. Fig. 3 is an enlarged sectional view of a portion of the compensating spring, turnbuckle, and thimble.

Like letters of reference refer to like parts throughout the specification and drawings.

To the lower end of the standard *a* is connected a crank-axle bracket *b*, and contained in the crank-axle bracket *b* is a sleeve or lining *c*. This sleeve or lining *c* is made in two sections *d* and *e*, the outer end of each of which is rigidly connected to the adjacent end of its respective lower side bar *f* of the rear forks, and pivoted to the outer ends of the lower side bars are the lower ends of the upper side bars *g*. Contained in the upper end of the standard *a* is a vertically-movable thimble *h*, and passing through the thimble *h* is a hollow adjustable bolt *i*, the lower end of which is fitted with a turnbuckle *j*. Fitted to the lower end of the standard is a pin *k*, and connected to the pin *k* and turnbuckle *j* is a coiled spring *l*. The upper end of the standard *a* is provided with a vertical slot *m* contiguous to the upper end of the upper side bars *g*. The thimble *h* is provided with an outwardly-extending lug *o*, which projects through the slot *m* and to which are pivoted the upper ends of the side bars *g*. Hinged to the lower end of the bolt *i* is a valve *p*, arranged to open downwardly, and formed through the valve *p* is a diminutive hole *q*.

The jolting of the bicycle when passing over rough places causes the lower side bars to oscillate from the crank-axle bracket outward, and this oscillation causes the upper side bars to move upwardly, raising with them the thimble *h* and extending the spring *l* and opening the valve *p*. When the valve *p* is opened, the air entering the standard through the slot *m* passes through the bolt *i* into the spring-chamber *r*, which consists of that part of the standard between the crank-axle bracket and lower end of the thimble. The spring *l* on its return movement returns the thimble and the rear forks to their normal position, and the return of the thimble causes the valve to close the opening through the bolt and forces the air to escape from the spring-chamber through the diminutive hole in the valve and cushion the return of the parts. By means of this construction the standard, and consequently the saddle, are relieved to a very considerable extent of the vibratory motion caused by the jolting or jarring of the vehicle when passing over rough roadways. By providing the thimble with an adjustable bolt and turnbuckle the tension of the spring can be increased or diminished to correspond with the weight of the rider.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A bicycle-frame embracing in its construction a standard slotted at its upper end, a crank-axle bracket rigidly connected to the lower end of the standard, the lower side bars of the rear forks oscillatingly connected to the crank-axle bracket, the upper side bars being pivotally connected to the outer ends of the lower side bars, a vertically-movable thimble contained in the standard provided with a lug extending outwardly through the slot of the standard and to which the upper side bars of the rear forks are connected, and a spring connected to the thimble and to the standard to return the parts to their normal positions, substantially as specified.

2. A bicycle-frame embracing in its construction a standard slotted at its upper end, a crank-axle bracket rigidly connected to the lower end of the standard, a sectional sleeve

rotatably contained in the crank-axle bracket, the lower side bars of the rear forks rigidly connected to the outer ends of the sleeve-sections, the upper side bars pivotally connected to the outer ends of the lower side bars, a vertically-movable thimble contained in the standard provided with a lug extending outwardly from the slotted end of the standard, the upper side bars of the rear forks pivotally connected to the lug, a hollow adjustable bolt passing through the lower end of the thimble, a downwardly-opening valve having a diminutive opening through it to close the passage through the bolt and a spring connected to the bolt and to the standard, substantially as specified.

3. A bicycle-frame embracing in its construction a standard slotted in its upper end, a crank-axle bracket rigidly connected to the lower end of the standard, a sectional sleeve rotatably contained in the crank-axle bracket, the lower side bars of the rear forks rigidly connected to the outer ends of the sleeve-sections, the upper side bars pivotally connected to the outer ends of the lower side bars, a vertically-movable thimble contained in the standard provided with a lug extending outwardly through the slotted end of the standard, the upper side bars of the rear forks pivotally connected to the lug, a hollow adjustable bolt passing through the lower end of the thimble, a downwardly-opening valve having a diminutive opening through it to close the passage through the bolt, and a spring connected to the bolt and to the standard, a turnbuckle for the bolt and a spring connected to the turnbuckle and to the lower end of the standard, substantially as specified.

Barrie, February 2, 1901.

DALUS W. JUDSON.

In presence of—
GILBET WEBB,
WALTER WITTEN.