

(No Model.)

G. C. W. & W. A. D. HIPPERLING.
CYCLE.

No. 572,544.

Patented Dec. 8, 1896.

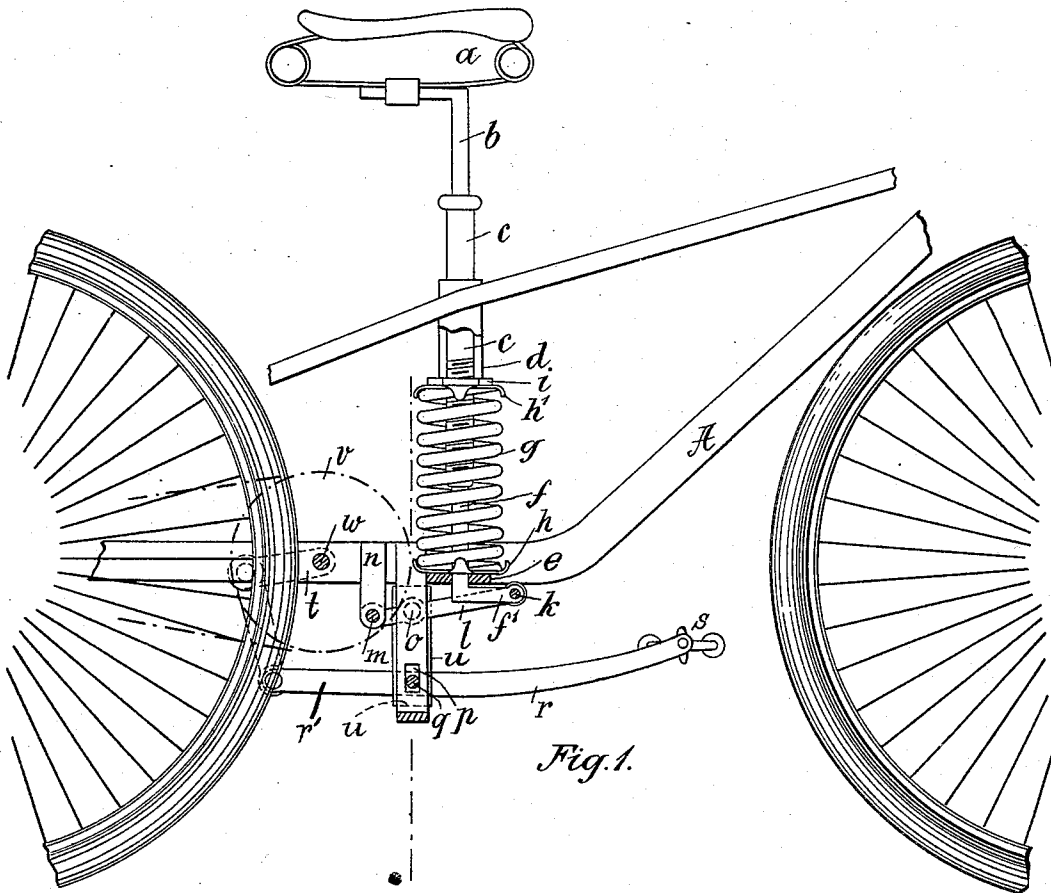


Fig. 1.

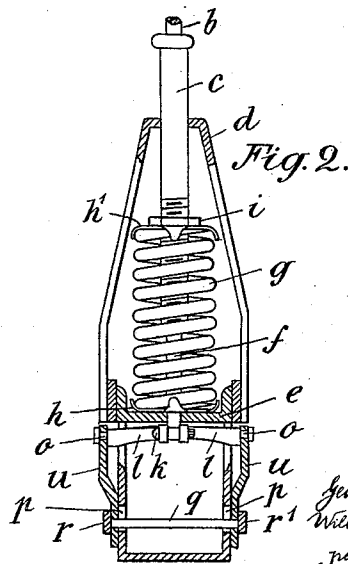


Fig. 2.

Witnesses:
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UNITED STATES PATENT OFFICE.

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CYCLE.

SPECIFICATION forming part of Letters Patent No. 572,544, dated December 8, 1896.

Application filed May 4, 1896. Serial No. 590,240. (No model.)

To all whom it may concern:

Be it known that we, GEORG CHRISTIAN WILHELM HIPPERLING and WILHELM ANTON DIETRICH HIPPERLING, subjects of the Emperor of Germany, and residents of Wandsbeck-Hamburg, in the Empire of Germany, have invented new and useful Improvements in Cycles, of which the following is a specification.

10 This invention has for its object a contrivance for retaining constant, irrespective of the weight, the distance between the saddle and the pedals on such cycles as have a spring arranged for carrying the saddle as a substitute for the pneumatic tires.

15 On the drawings, Figure 1 shows a side view of the contrivance, partly in section; Fig. 2, a front view, partly in section.

20 The saddle *a* is fastened on the right-angled rod *b*, by which it can be fixed at any desired height in the tube *c*. The upper part of the tube *c* is inserted into the frame *d* and its lower part into the cross-piece *e* by means of the rod *f*, bent forward below the latter.

25 Around the tube *c* a strong spiral spring *g* is placed, the lower end of which presses against the plate *h*, resting on the cross-piece *e*, and the upper end against the plate *h'*. The latter abuts against the nut *i*, which can be

30 screwed up and down on the tube *c*, which is here provided with a thread in order to give the spring *g* tension in proportion to the weight on the saddle *a*. This spring *g* serves for taking up the jolting and renders pneumatic tires superfluous.

35 The forwardly-bent angle-arm *f'* of the rod *f* is, by means of a bolt *k*, linked to the like operating-levers *l l*. The points of support of these levers are formed by the bolts *m m'* of the arms *n n*, fastened on the frame *A*,

while the bolts *o o* lie in such manner between the bolts *m m* and the common bolt *k* that $\frac{mo}{ok}$ forms a proper fraction, that is, *mo*

must be shorter than *ok*. The bolts *o* of the 45 levers *l l* are linked with the common bolt *q*, lying in the slots *p* in the connecting-rods *u*. This bolt *q* forms at the same time the fulcrum for the treadle-levers *r r'*. The ratio of the free longer arm to the short arm of 50 each of these treadle-levers is likewise $\frac{mo}{ok}$.

It is therefore obvious that with any weight operating on the saddle in consequence of the above-described lever transmission the 55 distance between the saddle *a* and pedal *s* always remains the same.

The shorter lever-arm of the treadle-lever *r* (or *r'*) is connected in any known manner 60 with the crank *t*, which is mounted on the shaft *w* of the chain-wheel *v*.

What we claim is—

In a contrivance for retaining constant the distance between the saddle and the pedals of cycles the combination of the two levers *l* 65 *l*, linked to the saddle-rod, with the bolt *k*, the spring *g*, the stationary bolt *m*, on which the levers *l l* are turned, the bolts *o*, the connecting-rods *u*, the bolt *q*, which on the yielding of the saddle *a*, yields as much as the 70 bolts *o*, so that as the lever-arms of the lever *l* have the same proportion, as the treadle-lever arms, the pedal *s* always remains equidistant from the saddle, as described.

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Witnesses:

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