

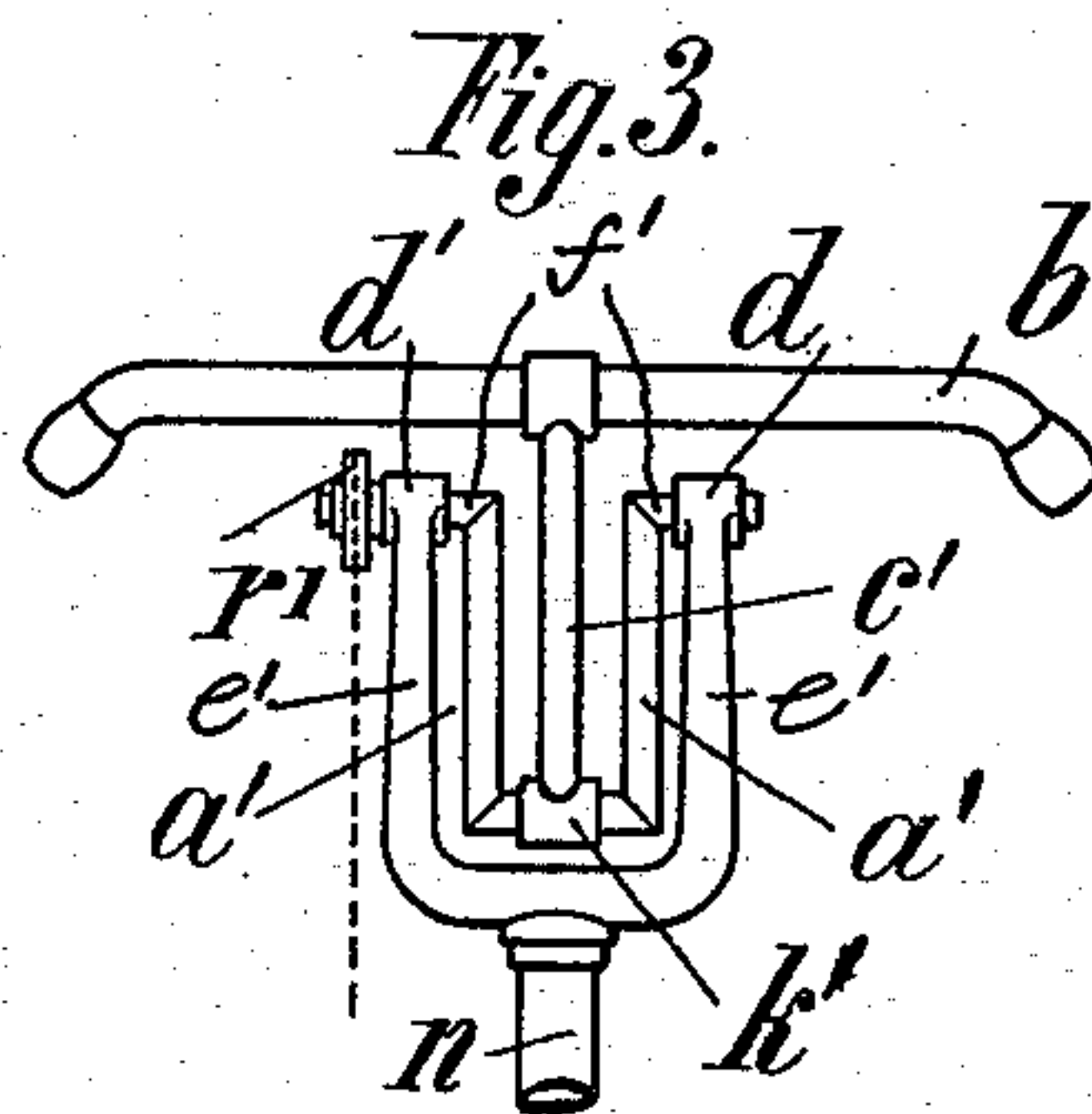
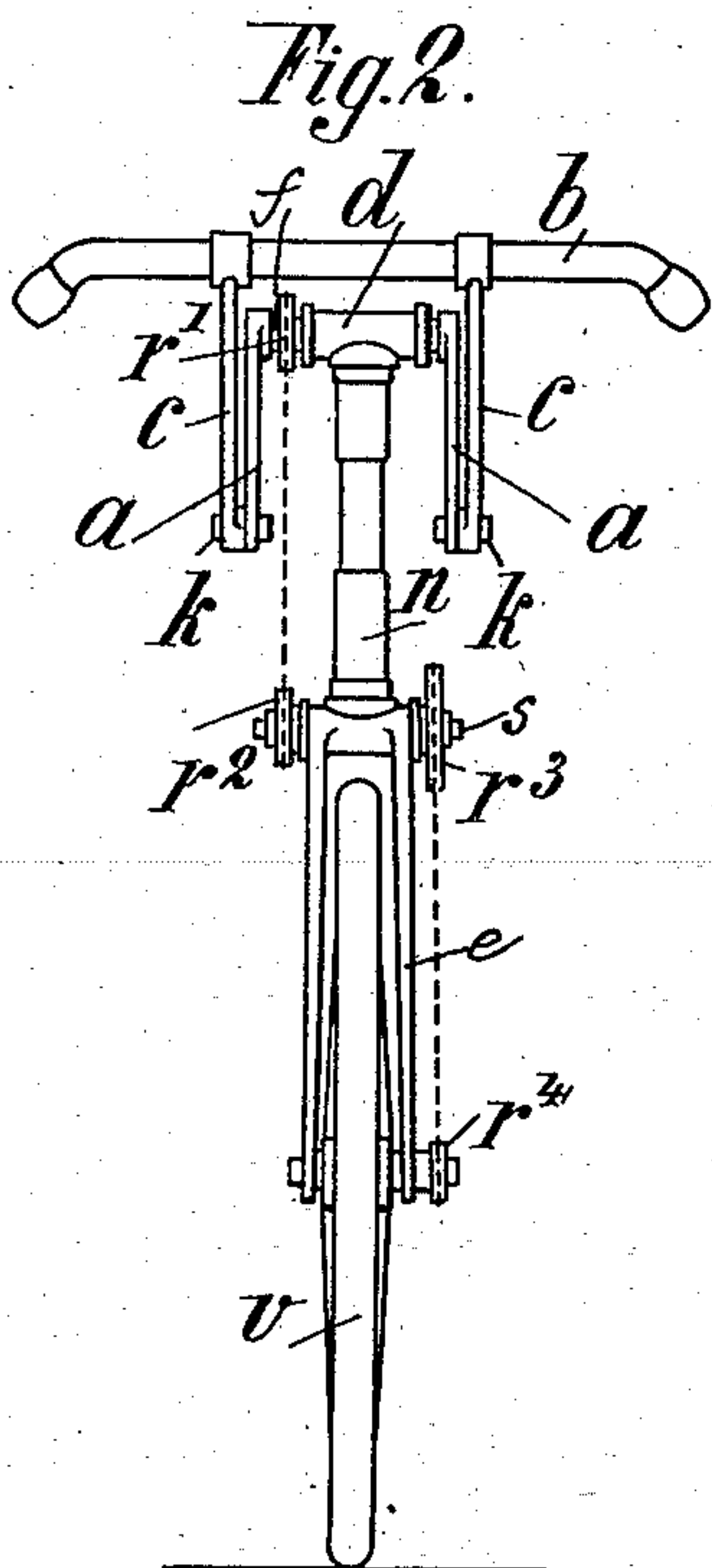
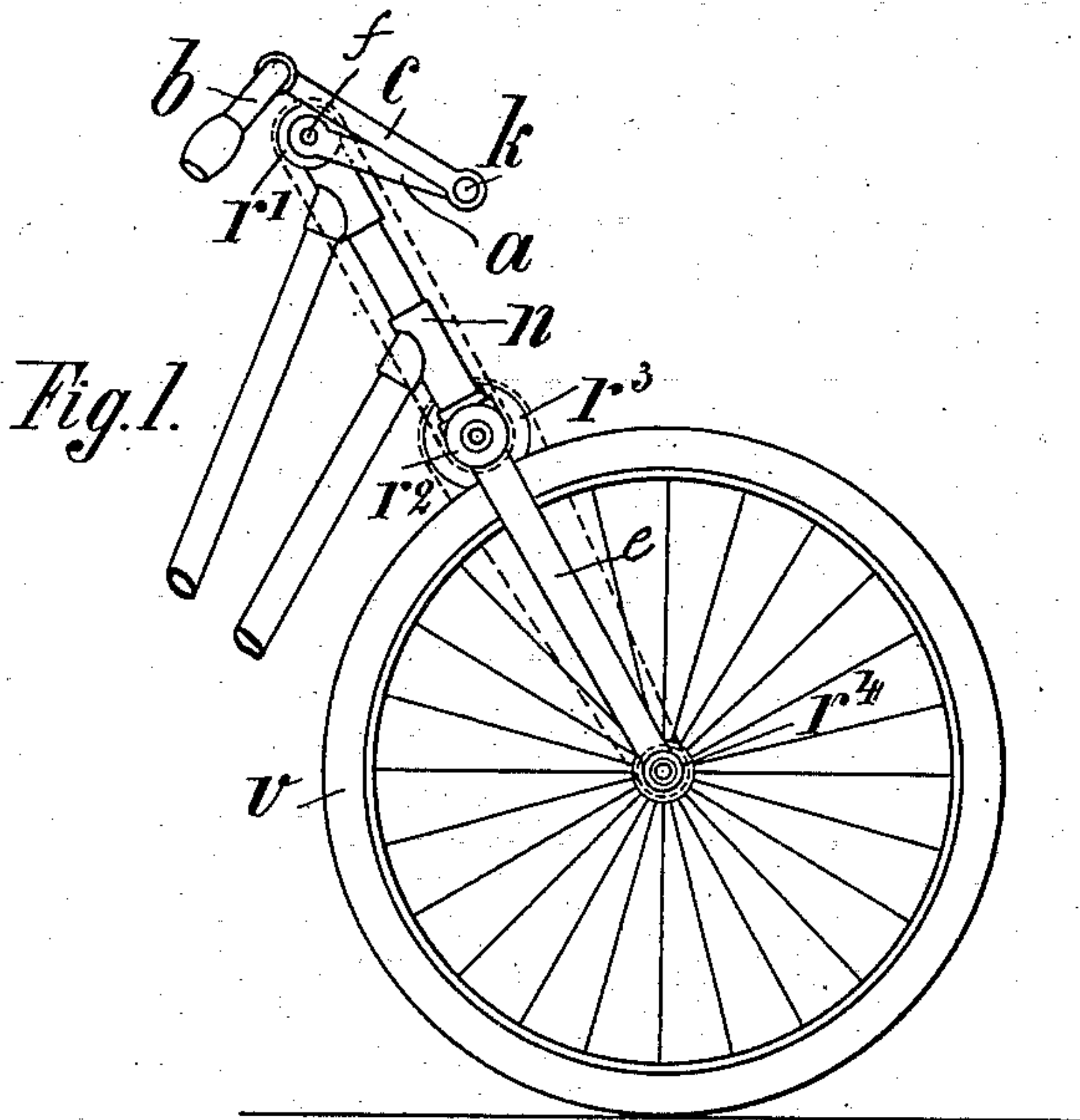
No. 651,941.

Patented June 19, 1900.

A. F. W. J. VON WEDEL,  
VELOCIPED DRIVING MECHANISM.

(Application filed May 16, 1898.)

(No Model.)



*Witnesses.*  
*Attest.*  
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*Atty.*



# UNITED STATES PATENT OFFICE.

AUGUST FRIEDRICH WILHELM JULIUS VON WEDEL, OF HAMBURG,  
GERMANY, ASSIGNOR TO GEORG STECHER, OF SAME PLACE.

## VELOCIPEDE DRIVING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 651,941, dated June 19, 1900.

Application filed May 16, 1898. Serial No. 680,854. (No model.)

*To all whom it may concern:*

Be it known that I, AUGUST FRIEDRICH WILHELM JULIUS VON WEDEL, a subject of the King of Prussia, German Emperor, residing at Hamburg, in the German Empire, have invented certain new and useful Improvements in Velocipede Driving Mechanism, of which the following is a specification.

My invention relates to improvements in velocipede driving mechanism, and has for its object the providing of an improved mechanism by means of which the rider may help with his hands in propelling the vehicle, so that the feet and hands together may be used for driving the velocipede or similar vehicle in order to make hill-climbing easier or to obtain a greater speed with much less stress upon the rider.

The invention consists in the construction and arrangement of parts hereinafter described, and particularly pointed out in the claim.

In order that my invention may be fully understood, reference will be made to the annexed drawings, in which like letters of reference refer to like parts throughout the several figures.

Figure 1 is a side elevation of the fore part of a bicycle provided with my improved hand driving mechanism. Fig. 2 is a front elevation of Fig. 1. Fig. 3 is a view similar to Fig. 2, showing a modification of the hand driving mechanism.

In the construction shown by Figs. 1 and 2 the front fork *e* is rotatably mounted in a well-known manner in the front tube *n* of the cycle-frame. In the head of the machine is a bearing *d*, in which is journaled a crank-shaft *f*, carrying at each end a crank-arm *a*. These crank-arms *a a* are in the same radial plane and directly opposite each other and carry at their free ends crank-pins *k*. To these pins *k* are pivoted two arms *c*, (one at each side,) to the free ends of which is firmly attached the handle-bar *b*. The handle-bar *b* and the arms *c c* form, therefore, a rigid whole—that is to say, a sort of handle-piece by means of which the crank-arms *a* and the crank-shaft, respectively, may be rotated when the said handle-bar or handle-bar piece *b c c* is operated by the rider, as will be

evident from the drawings without further explanation. As the handle-bar is plainly free, the operator is enabled to move it in such a manner as may suit him best, and as the greatest power may be applied upon the handle-bar alternately by a pull and push the handle-bar will receive from the rider a to-and-fro motion.

The rotation applied to the crank-shaft *f* in the steering-head and which carries a sprocket-wheel *r'* is transmitted by means of a chain-gearing to the sprocket-wheel *r''* on an intermediate shaft *s*, journaled in the crown of the front fork, and from this shaft *s* (which carries a second sprocket *r'''* by means of a chain and a sprocket *r''''*) is transmitted to the hub of the front wheel *v*, so that the handle-bar may be used as a means to aid in propelling the bicycle, besides the usual driving mechanism.

The chain-wheel *r''* on the hub of the front wheel may be provided with a suitable ratchet coupling device, which automatically couples the hub and the sprocket-wheel *r''* when the latter is rotated in the proper direction to drive or assist the rotation of the front wheel *v* and which automatically uncouples the hub and sprocket-wheel as soon as the latter stops. Consequently the hand driving mechanism may be set at rest at any time by simply holding the hands still or stopping the motion of the handle-bar.

The automatic coupling device is not shown in the drawings, as such devices are well known and need, therefore, no particular explanation.

In the modification shown by Fig. 3 the steering-head is provided with a fork and the crank placed inside the said fork. For this purpose the arms *e'* of the fork are provided with bearings *d'*, in which are journaled the shafts or pivots *f'* of the crank *a'*. In the present case the handle-bar *b* is provided with but one rigid arm *c'*, which is pivotally connected to the crank-pin *k'* of the crank *a'*. The sprocket-wheel *r'* is firmly secured upon one of the shafts *f'*. The operation and action of this modified hand driving mechanism is the same as the operation of that shown in Figs. 1 and 2. By comparing Figs. 2 and 3 it will be seen that the shaft *s* and arms *a*,



Fig. 1, form a yoke-shaped element similar to that formed by the parts *k'* and *a'* in Fig. 3, only differently journaled, but operating to perform the same function.

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

In a driving mechanism for bicycles, a double crank journaled in the steering-head, a sprocket-wheel thereon, a handle-bar, an arm  
10 rigidly connected to said handle-bar to revolve the crank and sprocket, a shaft jour-

naled in the crown of the front fork, sprocket-wheels on said shaft at either side of the crown, a chain connecting the sprocket at the cranks 15 with one at the crown, and a second chain connecting the other sprocket at the crown with one on the wheel, substantially as set forth.

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