

No. 621,925.

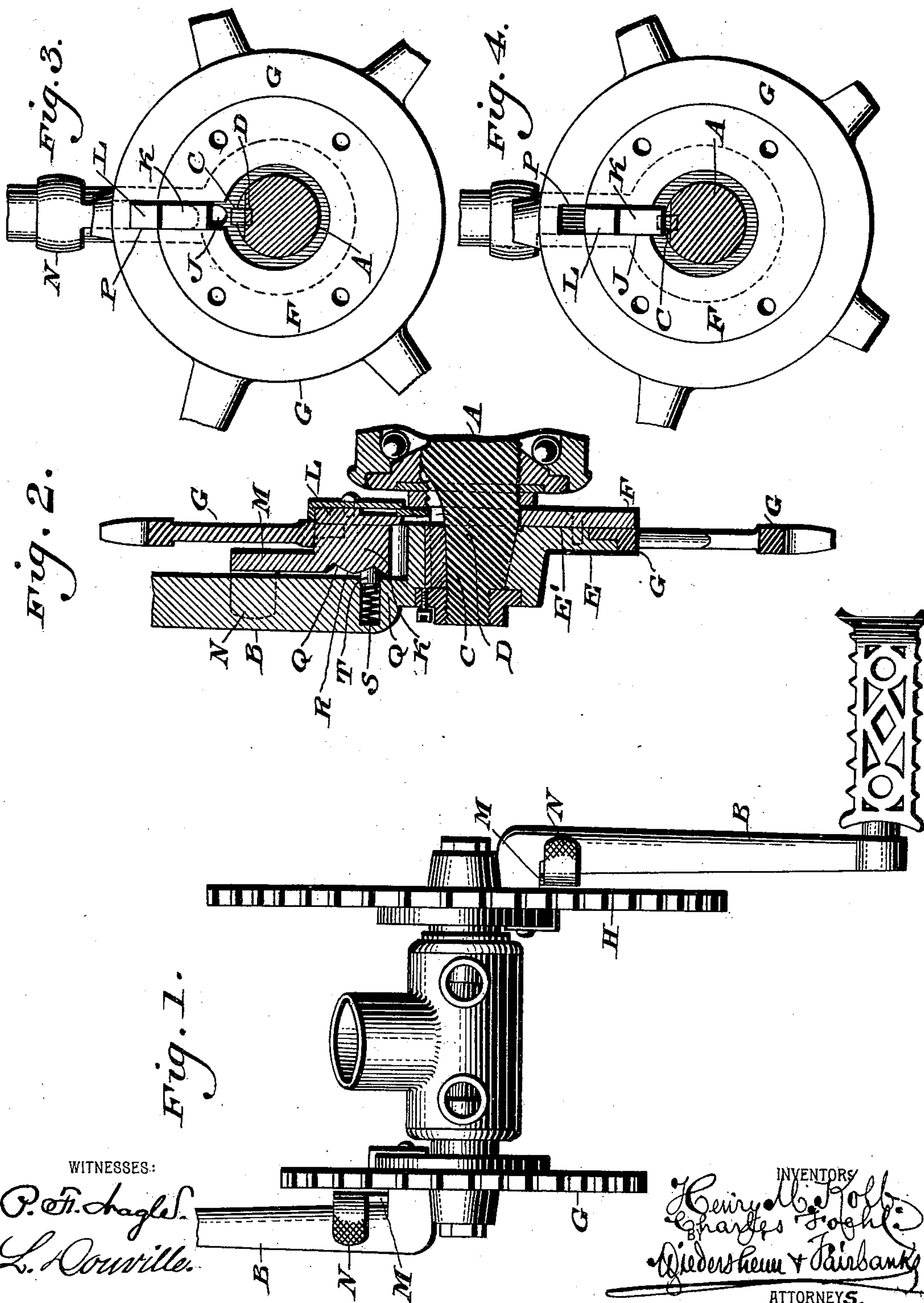
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H. M. KOLB & C. FOEHL.

BICYCLE GEAR.

(Application filed May 5, 1898.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

HENRY M. KOLB AND CHARLES FOEHL, OF PHILADELPHIA, PENNSYLVANIA.

## BICYCLE-GEAR.

SPECIFICATION forming part of Letters Patent No. 621,925, dated March 28, 1899.

Application filed May 5, 1898. Serial No. 679,768. (No model.)

*To all whom it may concern:*

Be it known that we, HENRY M. KOLB and CHARLES FOEHL, citizens of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Bicycle-Gears, which improvement is fully set forth in the following specification and accompanying drawings.

Our invention consists of a bicycle-gear embodying sprocket-wheels of different diameters for the purpose of speeding, climbing, &c., both wheels being mounted loosely on the shaft, so that one wheel cannot operate against the other, either of said wheels being adapted to be clutched with the driving-shaft, and thus constitute the medium for imparting its power to the driving-shaft of the bicycle-wheel through intermediate chains, the mechanism employed being hereinafter set forth.

Figure 1 represents a rear elevation of the portion of a bicycle-gear embodying our invention. Fig. 2 represents a diametrical section thereof on an enlarged scale. Figs. 3 and 4 represent face views of portions of the gear, including the pedal-shaft in section, the clutch employed being shown in different positions.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings, A designates the pedal-shaft of a bicycle, and B designates the pedal-arms, which are fitted on the end of said shaft and provided with the tongues C, which enter grooves D in said shaft, whereby the rotation of said arms is imparted to said shaft.

E designates disks, each of which is formed with the portion of the pedal-arm around the place of connection with the shaft A and has secured to it the disk F, forming together a collar E', on which is freely mounted one of the sprocket-wheels G or H, it being noticed that the construction of parts is the same at the ends of said shaft, excepting that the sprocket-wheel H is of greater diameter than the sprocket-wheel G.

In the collars E', extending inwardly from the peripheries thereof, are the radial grooves J, the same being occupied by the dogs K, whose heads L have connected with them the shanks M, the latter being provided with ears

N, which freely encircle the adjacent portions of the pedal-arms B and serve as handles for operating said dogs. 55

In the hubs of the sprocket-wheels are the radial recesses P, which are adapted at certain times to register with the adjacent grooves J of the collars E', so that the heads L of the dogs K may enter said recesses and thus interlock or clutch the sprocket-wheels with the collars E', and consequently with the pedal-arms, whereby said wheels are rotated with said arm. When, however, either dog is pushed in by the ear N, it occupies the adjacent groove J and is removed from the relative recess P, whereby the respective sprocket-wheel is free or loose on the collar E', and consequently receives no motion or power from the pedals. 60 65 70

In order to control the dogs in either of the two positions in which they may be placed, the side of each of the same toward the pedal-arm has its face formed with depressions Q, between which are the inclined surfaces R, and the adjacent portion of the pedal-arm has a recess S therein, the same receiving the spring-pressed pawl T, whose nose is adapted to enter either of said depressions Q. Now when the dog is pushed in or shifted from the position shown in Fig. 2 owing to the inclined surfaces T said pawl is overcome and the dog may be moved to the full extent, the pawl then dropping into the adjacent depression, and thus holding the dog at rest. When, however, said dog is drawn outwardly, the pawl is again overcome, so that when the dog has made its motion the pawl will enter the other recess and again control said dog, so that the latter properly retains its adjusted or set position. 75 80 85 90

It is evident that when it is desired to transmit the power of the pedal-shaft to either of the sprocket-wheels H or G, as the case may be, the proper dog is operated, so as to draw out the same, when the head of said dog engages with the relative sprocket-wheel, thus coupling or clutching said wheel with the collar it encircles, and consequently with the shaft and pedal-arm. In such case the dog of the other sprocket-wheel is pushed in, whereby the head of the adjacent dog is removed from the recess P and remains in the grooves J, thus uncoupling the last-named 95 100

sprocket-wheel and allowing the same to rest freely on the collar E' without receiving motion from the pedal-shaft. By these means either of the sprocket-wheels (which are of  
5 different diameters) may be geared or clutched with the shaft for the purpose of speeding, climbing, &c., as the case may be.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—  
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1. In a bicycle-gear, sprocket-wheels of different diameters freely mounted on the pedal-shaft, dogs carried by the pedal-arms adapted to be clutched with said sprocket-wheels and  
15 to be released therefrom, and spring-pressed pawls on said arms, the dogs being each provided with depressions at different places for the engagement of said pawls relatively to the set position of said dogs.

2. A collar having a groove extending in- 20 wardly from the periphery thereof, and a sprocket-wheel mounted loosely on said collar and having a recess in its hub portion, said groove and recess being adapted to be placed into and out of register, in combina- 25 tion with a sliding dog fitted in the groove of the collar and having a head adapted to be moved into said recess of the sprocket-wheel, a handle connected with said dog and carried by the pedal-arm, and means on said arm and 30 dog for holding the latter in the clutching or unclutching position of the head thereof.

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