

No. 789,580.

PATENTED MAY 9, 1905.

W. TRAINOR.
DRIVING GEAR FOR CYCLES.
APPLICATION FILED JULY 1, 1904.

Fig. 1.

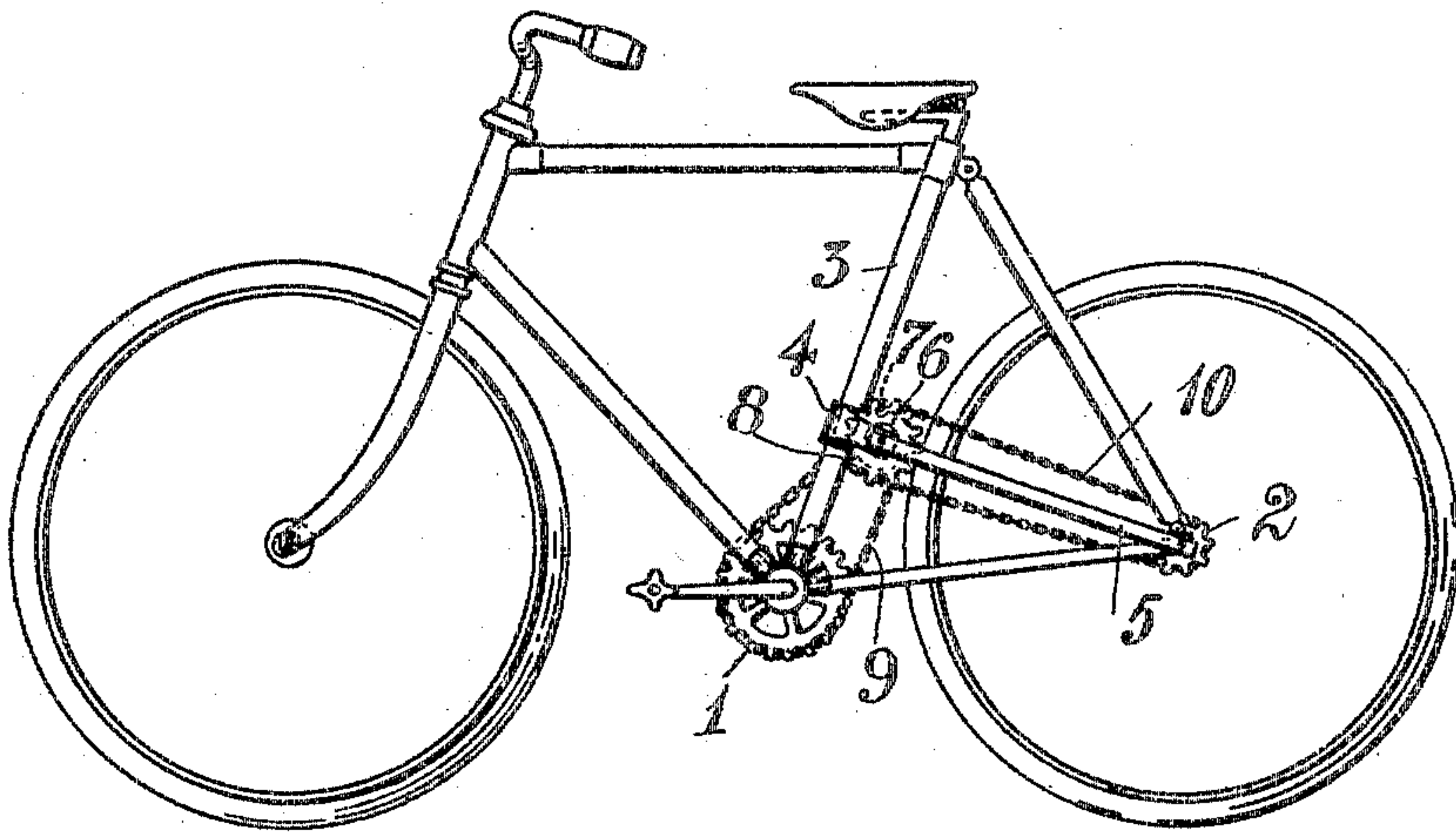


Fig. 2.

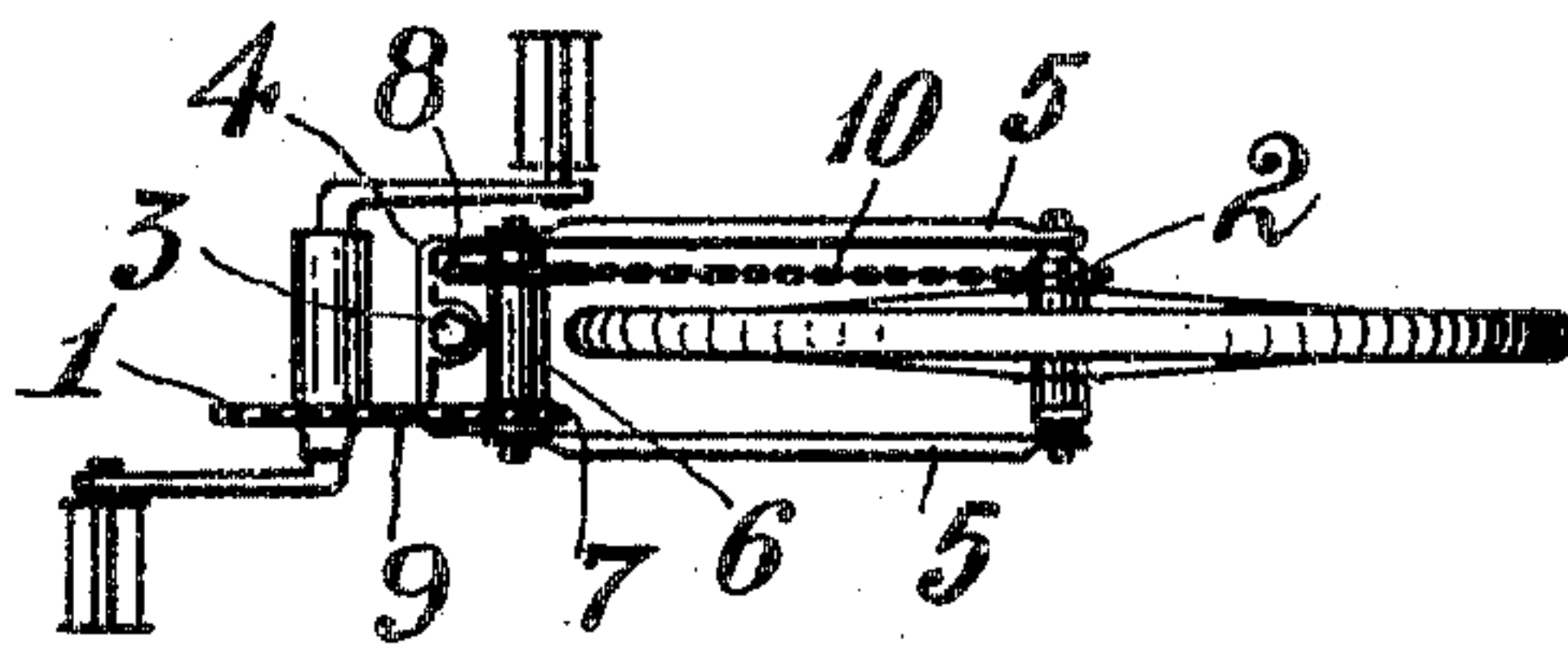
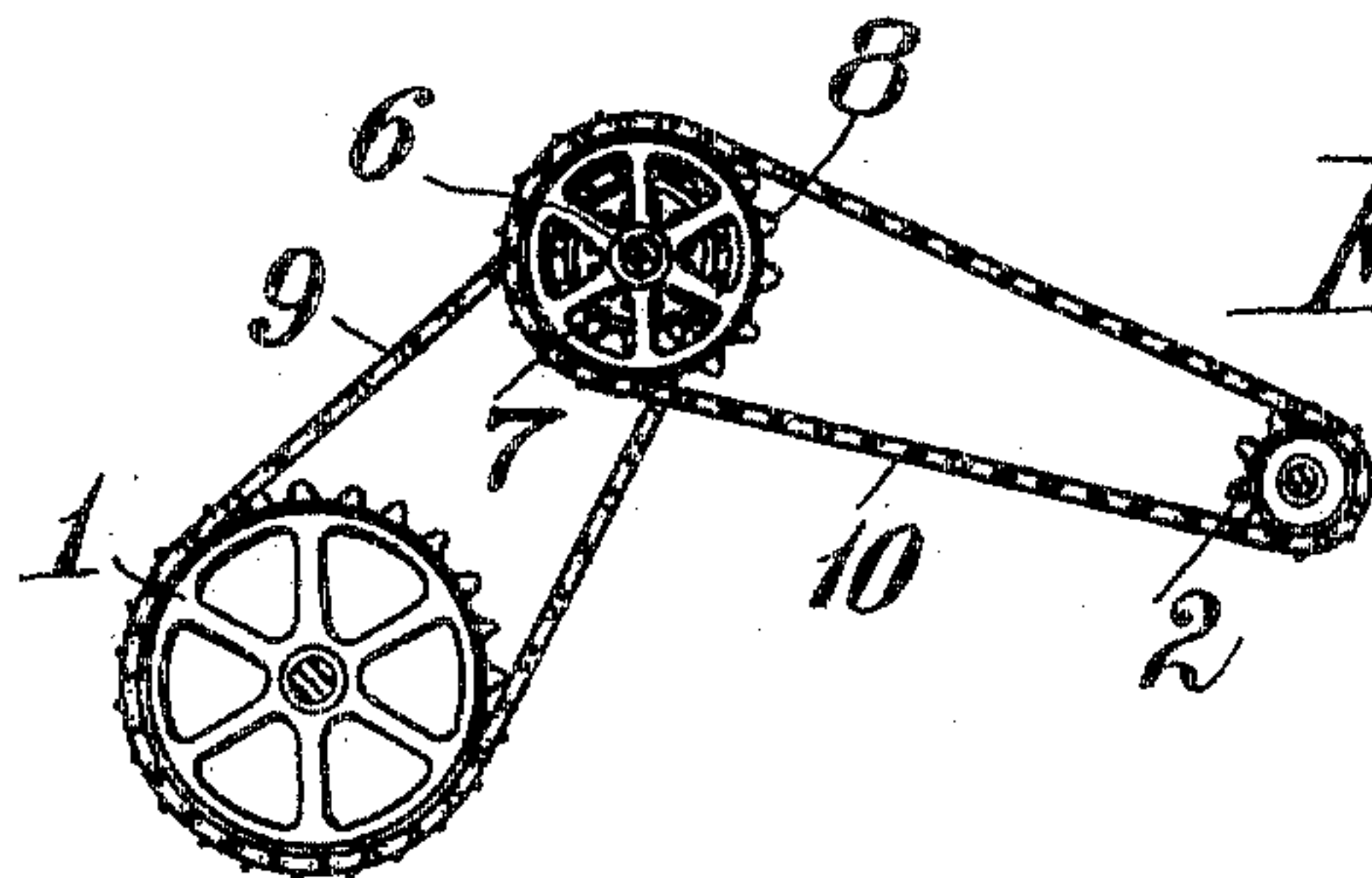


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM TRAINOR, OF KENSINGTON, NEAR MELBOURNE, VICTORIA,
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DRIVING-GEAR FOR CYCLES.

SPECIFICATION forming part of Letters Patent No. 789,580, dated May 9, 1905.

Application filed July 1, 1904. Serial No. 214,971.

To all whom it may concern:

Be it known that I, WILLIAM TRAINOR, inventor, a subject of the King of Great Britain, residing at 20 McCracken street, Kensington, near Melbourne, in the State of Victoria, Australia, have invented an Improved Driving-Gear for Cycles, of which the following is a specification.

This invention relates to improved driving-gear, and is more especially intended for cycles, to which it may be readily attached; and it consists in arranging a pair of multiplying-sprockets of different diameters arranged at an angle to the power-sprocket and driving-pinion, as hereinafter set forth. By this construction the cycle is evenly balanced and less liable to skid, while the advantage is obtained that higher gears can be used, even in hilly country, than heretofore without requiring any greater exertion on the part of the rider.

In the drawings which illustrate the invention, Figure 1 is a side elevation of the gear applied to a bicycle, and Fig. 2 a reverse plan with parts removed, while Fig. 3 is a detailed side elevation of the improved driving-gear.

Referring now to the drawings, 1 represents the ordinary large front sprocket, and 2 the small pinion on the drive-wheel, which according to this invention is secured on the opposite or left-hand side of the hub. On the down-tube 3 is a bearing-bracket 4, braced by struts 5 from the spindle of the drive-wheel, which at its forward end supports a hub or shaft 6, mounted transversely of the machine and at both ends of which are revolubly mounted sprockets 7 and 8, of different diameters.

The sprocket 7 is driven by a chain 9 from the sprocket 1, while the sprocket 8 is in gear with the pinion on the drive-wheel by a similar chain 10. By this means the advantage is obtained that cycles of comparatively high gear may be advantageously used in hilly countries without extra exertion.

The gear as illustrated in Fig. 3 is applicable for power purposes generally and the angular location of the sprockets always maintained.

The sprockets 7 and 8 are located in rear of the down-tube 3 at such elevation above the

ordinary large front sprocket 1 as to avoid as much lost motion as possible through the operation of the chain 9, and a further advantage is that the chain 10 is shortened between the sprocket 8 and the small sprocket 2 on the drive-wheel to decrease any tendency to lost motion and increase the power by bringing the sprockets 8 and 2 closer together in contradistinction to other structures where the sprockets 7 and 8 or analogous devices have been located in front of the down-tube and requiring a lengthening of a chain corresponding to the chain 10. Moreover, by the construction shown a small bearing-bracket 4, attached to the down-tube 3, may be used for supporting the journal means of the sprockets 7 and 8 without acquiring an extra brace or a complex structure, as would be the case if said sprockets 7 and 8 were positioned in advance of the said down-tube.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

In a driving-gear for cycles and the like, the combination with the ordinary large front sprocket and the sprocket on the rear drive-wheel, of a clamping-yoke 4 disposed on the down-tube of the cycle above and in rear of the said front sprocket, a shaft held by the ends of the yoke, sprockets 7 and 8 secured on the shaft and respectively connected to the front sprocket and drive-wheel, the sprocket 7 being considerably less in diameter than the sprocket 8 and strut-braces 5 engaging the terminals of the shaft 6 outside of the ends of the yoke, and the ends of the shaft of the rear wheel, said braces being disposed at an upward angle of inclination from the shaft of the rear wheel of the cycle to hold the yoke and parts carried thereby at a proper elevation and also to prevent the ends of the yoke from separating and releasing the shaft.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM TRAINOR.

Witnesses:

EDWARD WATERS,

EDWARD WATERS, Junr. 3d.