

PATENT SPECIFICATION

293,660

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COMPLETE SPECIFICATION.

Improvements in and relating to Speed Gear Mechanism for Cycles.



We, THE JAMES CYCLE COMPANY, LIMITED, a company incorporated under the laws of Great Britain, and FRED ARTHUR KIMBERLEY, a British subject, both of James Works, Gough Road, Greet, Birmingham, England, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to speed gear mechanism for cycles and refers particularly to mechanism as described in Specification No. 23,231 of 1904.

The present invention has for its object certain improvements designed to permit the change from the high speed to the low speed gear to be more easily and surely effected.

According to the present invention the pawl engaging the driving rack or ratchet instead of as heretofore being pivoted in a position midway between the driving end and the tail end is pivoted at the extreme end of the driving portion, which latter driving or engaging portion is thus situated midway or approximately midway between the pivot and the tail piece. Consequently instead of it being necessary, as heretofore, to lift the stud trip or foot to actuate the pawl in a manner such as to lift the tail piece and depress the driving end, it is now only necessary for the said stud trip or foot to drop on to the pawl to disengage it from the rack.

A further advantage incidental to the invention is that should the rider be pedalling fast the possibility of the trip missing the end of the pawl is prevented, and further the additional leverage provided by arranging the pivot at the end of the pawl enables a much weaker spring to be employed for actuating the pawl.

In order that the invention may be the better understood drawings are appended in which:—

Fig. 1 is an elevation showing certain parts.

Fig. 2 is an elevation of the sprocket wheel showing the ratchet teeth.

[Price 1/-]

Fig. 3 is a vertical section through the sprocket wheel and gear.

Referring to the accompanying drawings in which only such parts of the gear are identified and described as are essential to the proper understanding of the invention, 1 indicates a flanged or recessed disc fixed to the pedal crank 2 having secured therein an annulus provided with internal teeth 3 thereon engaging a pinion 4 mounted upon an annular disc 4a supported from the centre 4a of the sprocket or chain wheel 5, said pinion 4 also engaging a pinion 6 mounted upon disc 7.

The part 4a of the chain wheel has secured to it an annular member 8 having upon its inner periphery ratchet teeth 9.

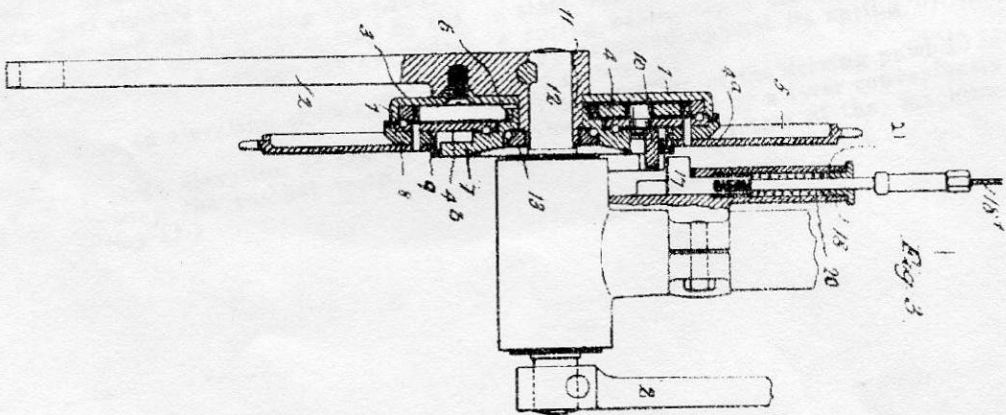
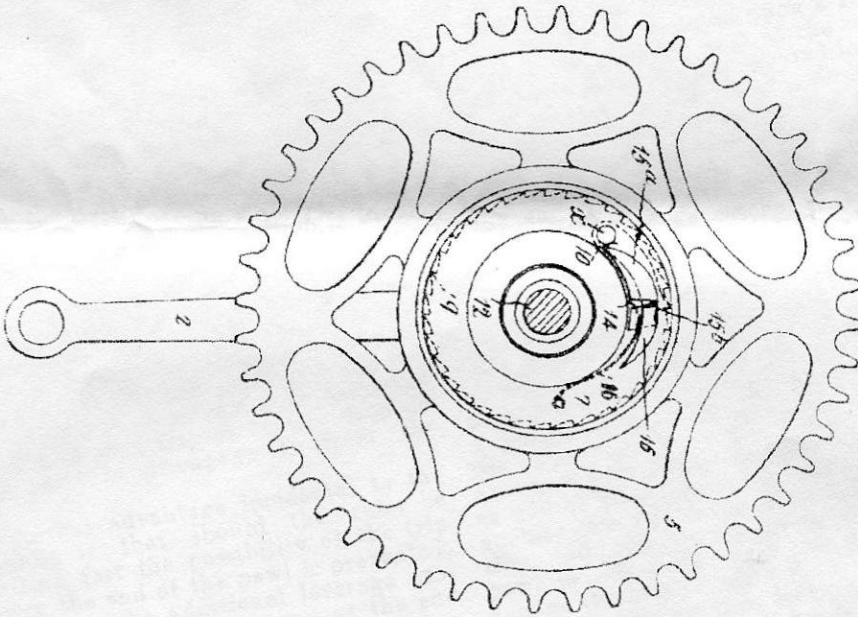
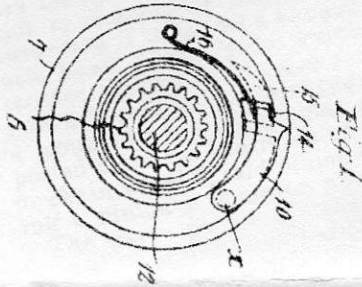
10 indicates a pawl pivotally mounted at a upon the inner face of disc 7, normally engaging the ratchet teeth 9. The disc 7 is revolvably mounted upon a sleeve 11 fixed to or forming part of the crank 2, said sleeve being rigidly secured in any suitable manner to the crank axle 12, a nut 13 being screwed on to the end of the sleeve to retain the pinion 6 and the disc 7 carrying it in position.

The end of the pawl 10 at the point where it engages the ratchet is bent or set at a right angle to the body thereof, said bent or set portion projecting through an opening 14 in the disc 7 and having upon it a wedge shaped extension 15 lying against the outer face of the disc 7, whereby the pressure of the trip or foot 17, hereafter referred to, operating the pawl is gradually applied. Rigidly secured to the outer face of the disc 7 is a plate 15a having a face 15b at its inner end which, as will be presently more fully explained, enables the disc to be held against rotation. 16 indicates the spring whereby the pawl is normally held in position to engage the ratchet teeth 9.

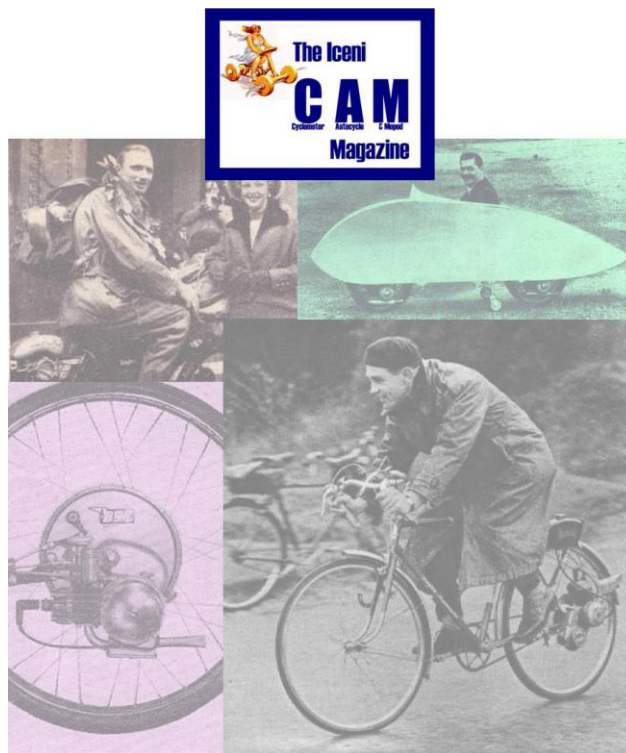
17 indicates a trip or foot provided with a stem working in fixed guide 18, and 20 a spring acting upon the foot, said foot being actuated against its spring by the cord or wire 13.

The operation of the driving pawl 10 is primarily effected by a lever conveniently mounted on the frame of the machine.

(This Drawing is a reproduction of the Original on a reduced scale.)



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