

THE MASTERPIECE OF VARIABLE DRIVING.
ESTABLISHED OVER 30 YEARS.

**PHILIPSON'S AUTOMATIC GOVERNOR PULLEY
FOR BELT DRIVEN MOTOR CYCLES & CYCLE CARS**

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PHILIPSON & CO., Engineers, Astley Bridge, BOLTON.

Philipson's Patent Automatic Governing Pulley

For Belt-Driven Motor Cycles and Cycle Cars



INTRODUCTION

IN bringing this pulley before the Motor Cycling community, we desire in the first place to inform our readers that it has been our study during the past five years to produce a variable pulley which would be entirely rotary with the engine, and entirely free from complications, such as levers, rods, pinion wheels, and ball bearings, also freedom of end thrust, or mechanism which would not permit of an entirely free rotary movement, to be practically self-lubricating throughout all working parts, also to drive on its lowest gear without consideration for belt slack.

We have pleasure in saying that all the above has been accomplished in a most satisfactory manner, as described and illustrated herein.

Brief Description

The governor pulley which we have produced is entirely rotary with the engine, to which it is secured in the usual manner. It consists of a fixed and floating flange, between which the belt rises and falls. The floating flange is actuated by means of a spring governor through the medium of a coarse pitch screw on the outer boss of the floating flange. The automatic action is entirely derived from explosive shocks of the engine, the slightest shock being felt by the governor which causes the flanges to open or close accordingly, thereby a constant grip is kept on the belt whether it be at the top or bottom. Furthermore, the gripping faces are perfectly plain, and they cannot damage the sides of the belt.

The pulley has been severely tested on the most difficult roads imaginable, and its remarkable action leaves nothing more to be desired so far as a driving pulley is concerned.

Testing

The tests for the past year have all been carried out on a 1909 free engine Triumph with a top gear of never less than $4\frac{1}{2}$ to 1, and with a good quality rubber belt. All hills have been surmounted without a single exception. Thousands of miles have been ridden over irregular roads, including some of the most notorious hills with complete success.

The saving and increased life to the engine and tyres is considerable, as is also the consumption of oil and petrol.



Action of Pulley on the Road

The action of our pulley on the road can be best termed "ELASTIC," because the belt is constantly rising and falling between the flanges. On even roads or slight gradients, the automatic movement is scarcely perceptible, but on severe gradients it is very perceptible; this automatic flexibility gives the engine a freedom of action which cannot be obtained from any other gear or pulley on the market.

Action of Pulley on the Road—continued

The value of our pulley is very pronounced when travelling through congested traffic, the rider being able to instantly lower the gear without taking his hand from the steering bars, the speed being automatically picked up again when desired.

Our pulley is made expressly for touring purposes, which means that it is sensitive to gradients, but it can also be used for racing purposes by using a more powerful governor, which is only slightly sensitive to the steepest gradients; this pattern depends entirely on the rider actuating or retarding the governor by brake pressure.

For all ordinary purposes we recommend our touring pattern on account of its automatic flexibility.

With our pulley the engine is never allowed to labour, or injure itself in trying to pick up speed on a steep gradient, the governor automatically reduces the gear in sympathy with the power of the engine.

The slightest additional brake pressure on the governor by the heel of the rider will accelerate the reduction of gear still further, allowing the revolutions of the engine to be kept almost constant.

If the rider prefers to operate the governor by means of foot-pedal brake or handle-bar control, it is a simple matter for the rider to apply the same. We only supply the governor pulley as illustrated herein.

Motors Equipped with Two or Three-Speed Hub Gears

Riders whose machines are thus equipped will find our pulley of enormous advantage when used in connection with same.

In the first place a much higher top gear can be utilised than is at present permissible.

Secondly, it allows of an infinitely variable change being made through all the fixed gears, and

Thirdly, the whole ratio of the governor pulley is available for use after the bottom gear has been brought into requisition, thereby giving a considerably greater ratio, from highest to lowest, than has hitherto been procurable, and we make no hesitation in saying that if two machines of equal power be put into competition, both being fitted with three-speed gears, one equipped with our governor pulley and the other an ordinary type pulley, the former would prove an easy winner, either solo or with side car.

PHILIPSON'S PATENT AUTOMATIC GOVERNING PULLEY

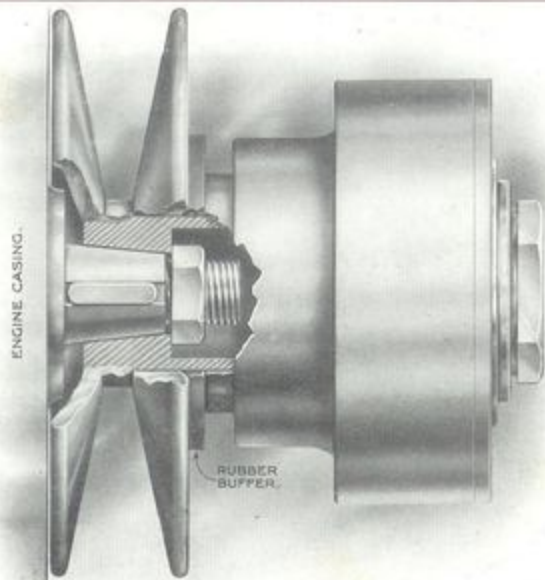
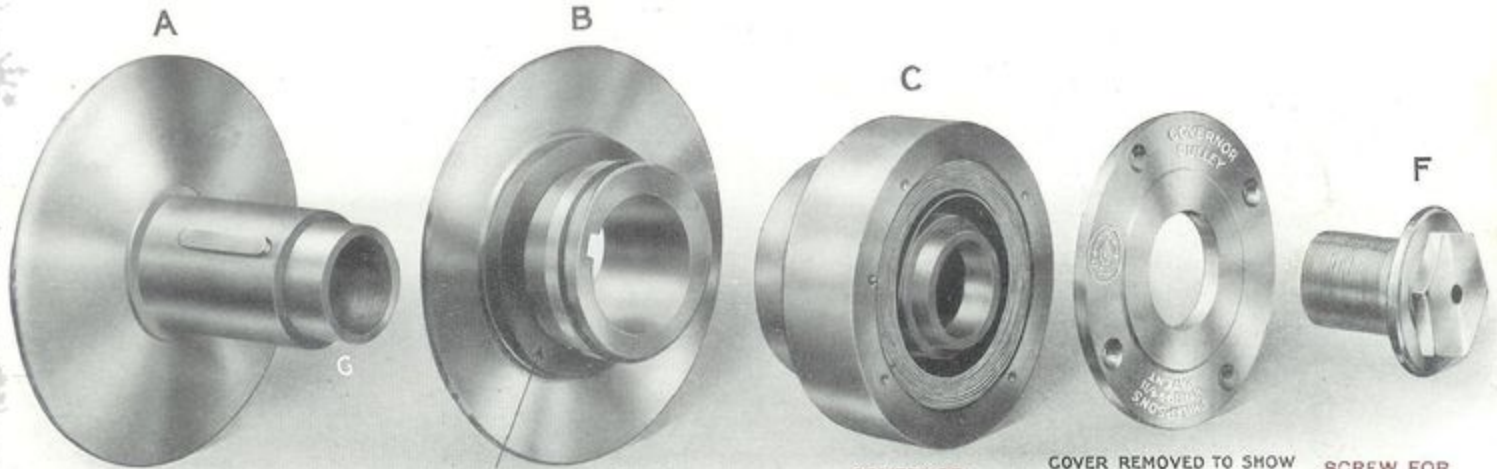


Illustration showing Pulley fixed to Engine.

The part in section shows method of fixing to engine shaft.

PHILIPSON'S PATENT AUTOMATIC GOVERNING PULLEY



FIXED FLANGE.

RUBBER BUFFER.

GOVERNOR.

COVER REMOVED TO SHOW INTERIOR OF C.

SCREW FOR LOCKING ALL PARTS TOGETHER.

G.—BUSH IN CONNECTION WITH C.

FLOATING FLANGE.

Comparison (other variable gears)

Our automatic governor pulley is unlike all other gears which are set by levers, etc., to one definite point or another, and it must not be classed or confused with the lever-operated type.

The driving belt in our pulley is constantly and automatically changing its position up and down between the flanges as aforesaid, the governor compelling a constant grip to be kept on the sides of the belt throughout the whole of its ratio.

B e l t s

A very important feature will be found in our pulley as follows:—The belt in its driving never assumes a sharper bend in its travel from the highest to the lowest than exists when it is passing round its highest ratio, therefore the chief cause of belt breaking and cracking is eliminated.

Conclusion

We have no hesitation in recommending the use of our Patent Governor Pulley to any Motorist having a belt-driven Motor Cycle. We feel confident that the readers of this pamphlet will agree that we have solved one of the greatest troubles which a Motorist has to contend with in a manner which cannot fail to appeal to Motorists generally.

Complicated parts are undesirable at all times, and always create trouble when least expected, hence our reason for strictly adhering to simplicity.

Users will find that we make remarkable statements as regards advantages; the claims are not exaggerated, more claims could safely be added.

Advantages

1. Increased driving power can be obtained from any engine fitted with our governor pulley, irrespective of the machine being equipped with HUB GEARS.

In machines fitted with the latter, an INFINITELY VARIABLE RATIO is procured between the highest and lowest gear, and still further through the WHOLE RATIO of the pulley. (No other system on the market can effect anything like such an effective combination of gears). Furthermore, the necessity of gear changing is reduced to a MINIMUM, consequently a great saving in gears is thereby effected.

2. Any maximum gear within the limits of the pulley can be obtained by releasing screw F and turning the governor C to the *right* for lowering and the *left* for raising, and then re-tightening screw F (see illustration).
3. Self-rotary on the engine shaft, to which it is fixed in the usual way.
4. Absolutely free from all complications, such as levers, ratchets, ball-bearings, pinion wheels, and anchorages to rotary parts.
5. Increased life of engine, belt, and tyres, and decreased cost of oil and petrol.
6. Increased safety in passing through congested traffic.

PHILIPSON'S PATENT AUTOMATIC GOVERNOR PULLEY

Is made of the finest quality materials, and every part is made on the interchangeable system (a touring governor can be taken off by removing the end locking screw and replaced with a racing governor).



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HERTS COUNTY TRIALS : *October 5th, 1912*

GOLD MEDAL & SILVER CUP *won by* **W. F. NEWSOME**

FOR

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