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PATENT SPECIFICATION

330,648



Application Date: March 12, 1929. No. 12,058/30.

Complete Left: Dec. 10, 1929.

(Divided out of No. 330,309.)

Complete Accepted: June 12, 1930.

PROVISIONAL SPECIFICATION.

Improvements in and relating to Front Forks for Motor Cycles.

I, GEORGE LESLIE WALLIS, of 26, Derwent Road, Anerley, London, S.E. 20, a subject of the King of Great Britain, do hereby declare the nature of this invention to be as follows:—

My invention relates to motor cycles.

The front fork is formed with telescopic tube members having internal springs in each of the fork arms, one set of springs absorbing the energy of the road shocks while the other set absorb the energy of the rebound.

In order to stiffen the lower ends of the front fork and prevent them twisting or bending when subjected to heavy lateral stresses incurred, for example, when cornering on dirt-tracks, I attach to the hub bolt on each side of the fork the lower ends of a tubular stay. These stays extend upwards, their upper ends being disposed above the upper surface of the front wheel and to the front of the steering pillar. The upper ends of these side stays are interconnected by a cross-stay. Near each end of this cross-stay, a frictional shock absorber is mounted, the lever arm of the absorbers being bolted at their outer ends to the members of the front fork which are not relatively movable to the head lug in a vertical direction.

The lower ends of the side stays are thus rigidly connected with the members of the front forks which are movable vertically relatively to the head lug while the cross stay which connects the upper ends of these side stays is connected with the members of the front forks which are stationary relatively to the head lug in the above sense.

The front fork may preferably be of the truss or girder type.

By means of my invention, an improved form of front fork for a motor cycle is provided, the construction of the front forks being such as to withstand exceptionally heavy stresses and is thus, amongst other purposes especially well adapted for dirt-track racing, while the weight of the machine is not substantially increased.

Modifications may be made in the example of my invention above described, both in detail and arrangement.

Dated the 12th day of March, 1929.

WILLIAM BRYSON,
Chartered Patent Agent,
29, Southampton Buildings, London,
W.C. 2.

COMPLETE SPECIFICATION.

Improvements in and relating to Front Forks for Motor Cycles.

I, GEORGE LESLIE WALLIS, of 26, Derwent Road, Anerley, London, S.E. 20, a subject of the King of Great Britain, 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:—

My invention relates to the front forks of motor cycles.

It has hitherto been proposed in motor cycles to construct the front fork with telescopically mounted fork tubes which were resiliently mounted in the fork and

carried at their lower ends the front wheel.

The object of my invention is to provide an improved form of front fork for motor cycles.

My invention consists in a front fork for a motor cycle, having telescopically or slidably mounted fork tubes which are resiliently mounted and carry at their lower ends the front wheel, stays and links being provided for interconnecting the relatively telescopic or slidable parts of the fork with one another.

My invention further consists in the

improved forks for the front wheels of motor cycles, to be hereinafter described.

Referring now to the accompanying drawings,

5 Figure 1, shows a side elevation of the front fork of a motor cycle, constructed according to my invention, while

Figure 2, shows a front elevation of same.

10 Figure 3, shows a detail view of the clamp for the upper ends of the fork tubes shown in Figures 1 and 2.

In carrying my invention into effect, according to one form, and as applied by way of example to a motor cycle for use 15 on dirt-tracks, the front fork is constructed of side members, 45, Figures 1 and 2, of the girder or truss type rigidly interconnected with one another and also with the steering pillar, 3, by means of 20 two cross members, 46 and 47.

The steering pillar, 3, is mounted in suitable bearings on the head lug, 1.

25 The cross-member, 47, is formed with slits, 70, Figure 3, between the holes therein, into which the upper ends of the side members, 45, and the steering pillar, 3, are inserted, and the cross-member clamped in position by means of the set- 30 screws, 71, and also by the nut, 48. The cross-member, 47, is formed with clamps, 72, for securing the handle-bars, (not shown).

35 The side members, 45, are brazed in the cross-member, 46, which is secured to the steering pillar, 3, by means of the nut, 44.

40 Within the side members, 45, the fork tubes, 49, are slidably and rotatably mounted, the fork tubes carrying at their lower ends, the hub-bolt, 50, for the front wheel, while their upper ends are provided with threaded socket pieces, 51, rigidly 45 secured to the tubes.

50 With each socket piece, 51, the threaded lower end of a rod, 52, is adapted to engage, the upper ends of these rods being rigidly secured to the cross-member, 53. Bearings 54, are provided for the rods, 52, in the upper ends of the side members, 45, while the rubber washers, 55, are inter- 55 posed between the upper ends of the side members, 45 and the cross-member, 53.

Springs, 56, extend between the socket pieces, 51, and the bearings, 54, in each 60 of the side members, 45. The tension of the springs, 56, may be adjusted by rotation of the fork tubes, 49.

The fork tubes, 49, together with the rods, 52, and the cross-member, 53, thus 65 move together against the action of the springs, 56, on upward displacement of the front wheel taking place.

On the hub-bolt, 50, on the outside of the lower ends of the fork tubes, 49, the 70 lower ends of the tube stays, 57, are

75 mounted, the upper ends of these stays being rotatable on a cross-stay, 58. On the cross-stay, 58, arms, 59, are rotatably mounted, the inner ends of these arms being welded to a tube, 60, which is rotatably mounted on a pin, 61, carried on lugs, 62, integrally formed with the cross- 80 member, 46. Discs, 63, are rigidly attached to the tube stays, 57, and discs, 64, of friction material are interposed between the discs, 63, and the outer ends 85 of the arms, 59.

On the cross-stay, 58, a sleeve, 65, is rotatably mounted and on this sleeve star washers, 66, are rotatably mounted, the 90 frictional resistance between the discs, 63, 64 and the arm, 59, being adjusted by means of the nuts, 67, which act on the washers, 66.

The arrangement of the tube stays, 57, 85 and the cross-stay, 58, acts to stiffen the fork tube, 49, and prevents twisting or bending of the lower ends of these tubes when subjected to heavy lateral stresses incurred, for example, when cornering on 90 dirt-tracks, while the discs, 63, 64 and the arms, 59, act as shock absorbers and rebound dampers for the fork tubes, 49.

Rebound springs may also be fitted in conjunction with the fork tubes, 49, if 95 desired, and may be employed either as an alternative to, or in addition to the shock absorbers formed by the discs, 63, 64, and the arms, 59.

By means of my invention, an 100 improved form of fork is provided for the front wheels of motor cycles, the construction of the forks being such as to withstand exceptionally heavy stresses and is thus especially adapted for motor cycles 105 used for dirt-track racing.

My invention may also be applied to motor cycles used for purposes other than 110 for dirt-track racing.

Having now particularly described and 115 ascertained the nature of my said invention and in what manner the same is to be performed. I declare that what I claim is:—

1. A front fork for a motor cycle, hav- 120 ing telescopically or slidably mounted fork tubes which are resiliently mounted and carry at their lower ends the front wheel, stays and links being provided for 125 interconnecting the relatively telescopic or slidable parts of the fork with one another, substantially as described.

2. A fork as claimed in claim 1, in 130 which the stays are adapted to stiffen the fork tubes, substantially as described.

3. A fork as claimed in claim 1, in 135 which one or more friction dampers are incorporated with the interconnecting means between the relatively telescopic or slidable parts, substantially as described.

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4. A fork as claimed in claim 1, in cycle, substantially as hereinbefore described and as illustrated by the 10
which means are provided for interconnecting the upper ends of the fork tubes, substantially as described. accompanying drawings.
- 5 5. A fork as claimed in claim 1, in Dated the 10th day of December, 1929.
which internal springs are provided for WILLIAM BRYSON,
the fork tubes, substantially as described. Chartered Patent Agent,
6. The improved front fork for a motor 29, Southampton Buildings, London,
W.C. 2.

Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1930.

[This Drawing is a reproduction of the Original on a reduced scale.]

