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PATENT SPECIFICATION



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330,309

PROVISIONAL SPECIFICATION.

Improvements in and relating to 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.

My invention has for its object to provide an improved form of motor cycle, the construction of which is such as to effectively resist abnormal stresses such as are set up, for example, when cornering in dirt-track racing.

In carrying my invention into effect, according to one form and as applied, by way of example, to a motor cycle suitable for dirt-track racing, the head lug of the frame of the motor cycle is formed as a malleable casting with a bearing of any suitable type for the steering pillar of the front fork.

The head lug is provided with two sockets or is otherwise suitably formed for the attachment thereto of the two main structural members of the frame.

Both of the sockets extend in a rearwardly and downwardly inclined direction, the upper socket being only slightly inclined to the horizontal while the lower socket is inclined thereto at an angle of about 45 degrees.

The top member of the frame which is one of the main structural members thereof is attached to the upper socket of the head lug in any suitable manner, and extends rearwardly therefrom in a straight and slightly inclined direction and is then slightly curved downwardly to about the saddle position.

Adjacent to the saddle position, the top tube curves downwards through approximately a right angle and then continues straight or practically straight for a certain distance and is then bent slightly rearwards so that the lower end of the tube is more or less vertical.

The top tube has a lug secured thereto for the attachment of the intermediate stays hereinafter described, the lug being arranged near the upper end of the right angle bend in the tube.

The front tube which forms the other main structural member of the frame, is secured to the lower socket of the head

tube in any suitable manner and extends downwards for the first portion of its length in a straight line at an angle of about 45 degrees to the horizontal, after which it is bent slightly and for the last portion of its length is straight and inclined forwards at a small angle to the vertical.

The lower ends of the two main tube members are provided with lugs and are rigidly secured together by two spaced plates which serve as the cradle for the engine.

Two intermediate stays are attached at their forward ends by a bolt to the lower end of the head lug, these stays being arranged one on each side of the frame. These stays extend in a substantially horizontal direction rearwardly to the intermediate stay-lug to which they are rigidly secured by a bolt from which point they extend downwards in an inclined direction and act as the seat stays having their lower ends secured to the rear fork end.

To the front tube of the frame and at an intermediate point in its length, a lug is secured, and on each side of this lug a forward engine side plate of approximately triangular shape is disposed. The forward ends of these plates are bolted by means of a single bolt to the front tube lug, while the rear ends of the plates are bolted to the engine crank case by means of two crank case bolts.

At an intermediate point between the intermediate stay-lug and the lower end of the top tube of the frame, a double lug having a bored boss on the forward and rearward side of the tube, is secured and on each side of these bosses a rear engine side plate is positioned, the plates being secured to the lug by means of two bolts which pass one through each of the bosses. These plates at their forward sides are secured to the crank casing by two of the crank case bolts, while at their lower ends, they are bolted to the engine cradle plates.

The engine cradle plates extend rearwardly of the points at which the rear engine side plates are bolted thereto, and carry on their rear ends, the foot rests.

To the rear of the rear engine side plates, the fork for the rear wheel is bolted. This fork is formed as a malleable casting to the rear ends of which the forward ends of the chain stays are secured in any suitable manner, the rear ends of these stays being secured to the rear fork ends.

The bolt which secures the rear wheel fork to the rear engine plates also passes through an aluminium, steel or other metal distance piece which carries a bearing for the engine counter shaft located above the rear wheel fork. This distance piece is also secured to the jaws of the rear wheel fork by a second bolt which is located to the rear of the bolt securing this fork and the rear engine plates. In some cases, the distance piece, instead of being combined with a counter shaft bearing may be combined with a gear box.

The engine which is preferably of the vertical overhead valve type, drives the countershaft by means of a chain drive,

the countershaft in turn driving the rear wheel sprocket also by a chain drive. 25

The tank is located between the intermediate stay tubes and the upper portion of the top tube of the frame.

The saddle may be attached by any suitable means to the seat stays and also to the top tube. 30

By means of my invention, an improved form of motor cycle is provided, the construction of the frame 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. 35

Modifications may be made in the example of my invention above described, both in detail and arrangement. 40

Dated the 12th day of March, 1929.

WILLIAM BRYSON,
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W.C. 2.

COMPLETE SPECIFICATION.

Improvements in and relating to 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 motor cycles.

My invention has for its object to provide an improved form of motor cycle, the construction of which is such as to effectively resist abnormal stresses such as are set up, for example, when cornering in dirt-track racing.

My invention consists in a motor cycle frame formed of two main structural members which, at their upper ends, are connected to the head lug and at their lower ends are connected to the engine supporting plates.

My invention further consists in the improved motor cycle frame to be hereinafter described.

Referring now to the accompanying drawings,

Figure 1, shows a side elevation of a motor cycle frame constructed according to my invention.

Figure 2, shows a detail view of the bottom bracket of the motor cycle frame shown in figure 1.

In carrying my invention into effect, according to one form and as applied, by

way of example, to a motor cycle suitable for dirt-track racing, the head lug, 1, figure 1, of the frame of the motor cycle is formed as a malleable casting with bearings of any suitable type for the steering pillar of the front fork. 80

The head lug, 1, is provided with two sockets, 4 and 5, or is otherwise suitably formed for the attachment thereto of the upper ends of the two main structural members of the frame. 85

Both of the sockets extend in a rearwardly and downwardly inclined direction, the upper socket, 4, being only slightly inclined to the horizontal, while the lower socket, 5, has an increased inclination to the horizontal. 90

The top tube, 6, of the frame, which forms one of the main structural members thereof, is attached to the socket, 4, and to the web of the head lug, 1, in any suitable manner and extends rearwardly therefrom in a straight and slightly inclined direction and is then slightly curved downwardly to about the saddle position. 95

Adjacent to the saddle position, the top tube, 6, is bent downwards through approximately a right angle and then continues straight or practically straight for the remainder of its length. 105

The top tube, 6, has a lug, 7, secured thereto for the attachment of the intermediate stays, hereinafter described, the 110

lug being arranged as shown.

The front tube, 8, which forms the other main structural member of the frame, is secured at its upper end to the sockets, 5 and 5a, and to the web of the head lug, 1, in any suitable manner and extends downwards for the first portion of its length in a straight line inclined to the horizontal as shown, after which it is bent slightly and for the last portion of its length is straight.

The lower end of the tube, 8, is provided with a lug, 9, and to this lug the forward ends of two spaced plates, 11 and 12, figures 1 and 2, which serve as the cradle for the engine, 13, are rigidly secured.

Two intermediate stays, only one of which, 14, is shown in figure 1, are attached at their forward ends by a bolt, 15, to the lower end of the head lug, 1, these stays being arranged one on each side of the frame. The stays, 14, extend in a substantially horizontal direction rearwardly to the intermediate stay lug, 7, to which they are rigidly secured by a bolt, 16, from which point they extend downwards in an inclined direction and act as the seat stays and have their lower ends secured to the rear fork ends, 17.

To the front tube, 8, of the frame and at an intermediate point in its length, a lug, 18, is secured, and on each side of this lug a forward engine side plate, 19, is disposed. The forward ends of the plates, 19, are bolted by means of a single bolt, 20, to the front tube lug, 18, while the rear ends of these plates are bolted to the engine crank case by means of two crank case bolts, 21 and 22.

The lower end of the top tube, 6, of the frame is provided with a double lug, 23, having bosses, 24 and 25, on the forward and rear sides of the tube, as shown in figure 4. To the lug, 23, the rear engine side plates, 26 and 27, are secured by means of two bolts, 28 and 29, which pass one through each of the bosses. The plates, 26 and 27, at their forward sides are secured to the crank case by the two crank case bolts, 30 and 31, while at their lower ends, they are secured to the engine cradle plates, 11 and 12, by the bolt, 32.

The top tube, 6, in some cases, may be extended and connected at its lower end to the lower ends of the engine side plates.

The engine cradle plates, 11 and 12, extend rearwardly of the bolt, 32, and carry on their rear ends the foot-rests, 33.

To the rear of the rear engine side plates, 26 and 27, the fork, 34, for the rear wheel is bolted. The fork, 34, is formed as a malleable casting to the rear ends of which the forward ends of the chain stays, 35, are joined by welding, pre-

ferably in the manner described in my application for Letters Patent No. 6411 of 1929, (Serial No 326,972) although they may be connected in any other suitable manner. The rear ends of the stays, 35, are secured to the rear fork-ends, 17.

The bolts, 36, secure the fork, 34, to the engine side plates, 26, and 27, and also secure in position an aluminium, steel or other metal distance piece, 38, which carries the bearing, 37, for the engine countershaft, 39, located above the rear wheel fork, 34.

The engine, 13, which is preferably of the vertical overhead valve type, drives the countershaft, 39, by means of a chain drive, 40, the countershaft in turn driving the rear wheel sprocket, 41, by the chain drive, 42.

The tank, 43, is located between the intermediate stay tubes, 14, and the upper portion of the top tube, 6, of the frame.

The saddle, 44, may be attached by any suitable means to the portion of the intermediate stay tubes, 14, forming the seat stays and also to the lug, 7.

The front forks may be of any suitable type.

By means of my invention an improved frame for motor cycles is provided, the construction of the frame being such as to withstand exceptionally heavy stresses and is thus especially adapted to dirt-track racing, while the weight of the machine is not substantially increased.

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

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:—

1. A motor cycle frame formed of two main structural members which at their upper ends are connected to the head lug and at their lower ends are connected to the engine supporting plates, substantially as described.

2. A cycle frame as claimed in claim 1, in which the main structural members are provided with intermediate stay members the rear portions of which form the seat stays, substantially as described.

3. A cycle frame as claimed in claim 1, in which a distance piece interposed between the supporting plates at the rear of the engine acts as a bearing for the countershaft, substantially as described.

4. A cycle frame as claimed in claim 1 in which the fork for the rear wheel is connected to the engine supporting plates, substantially as described.

5. Improved cycle frames, substantially

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as hereinbefore described and/or as
shown by the accompanying drawings.

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■ Dated the 10th day of December, 1929.

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Fig. 1.

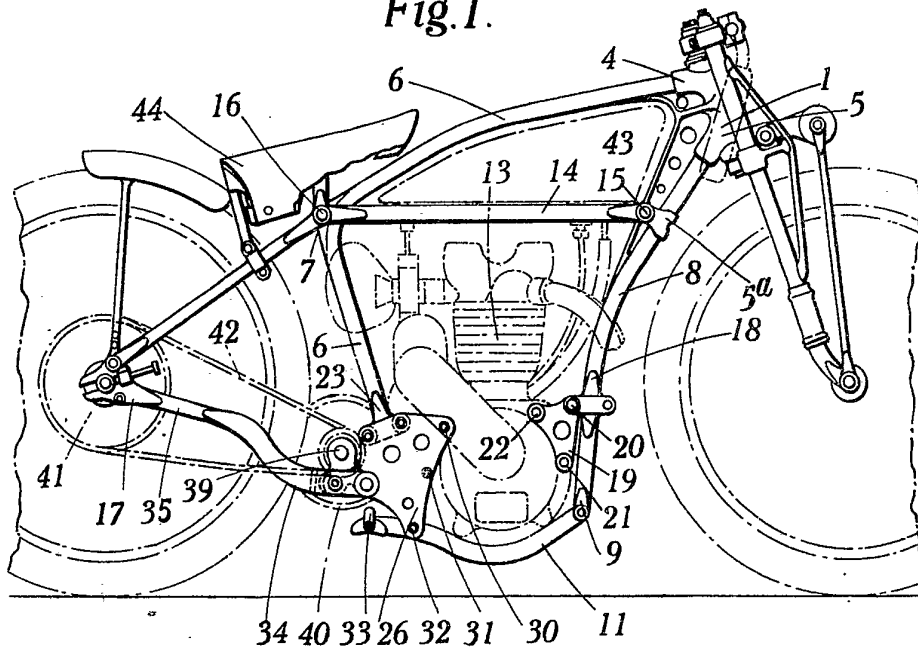
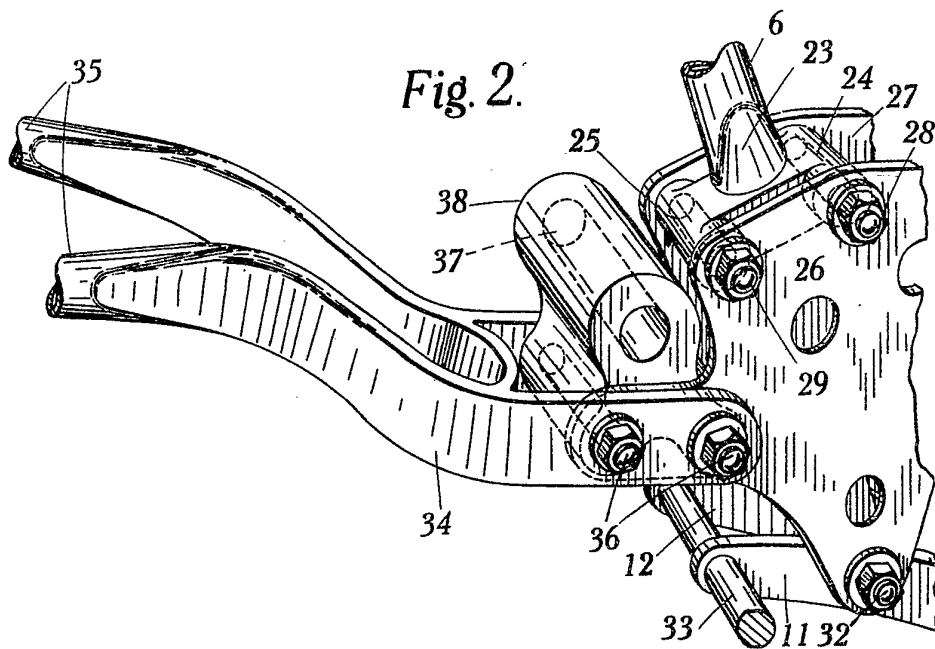


Fig. 2.



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