Dec. 3, 1957 M. ERNST 2,814,908

TOY MOTOR CYCLE WITH MOUNTING AND DISMOUNTING CYCLIST

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Fig. 1

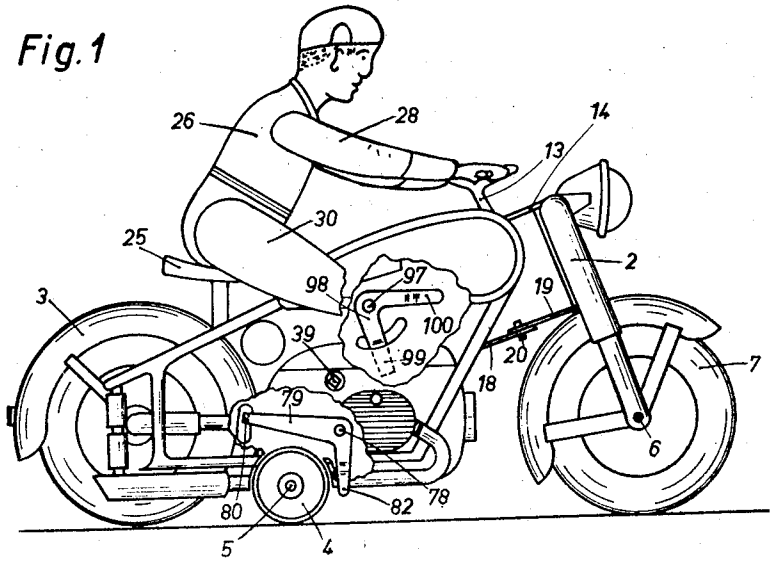
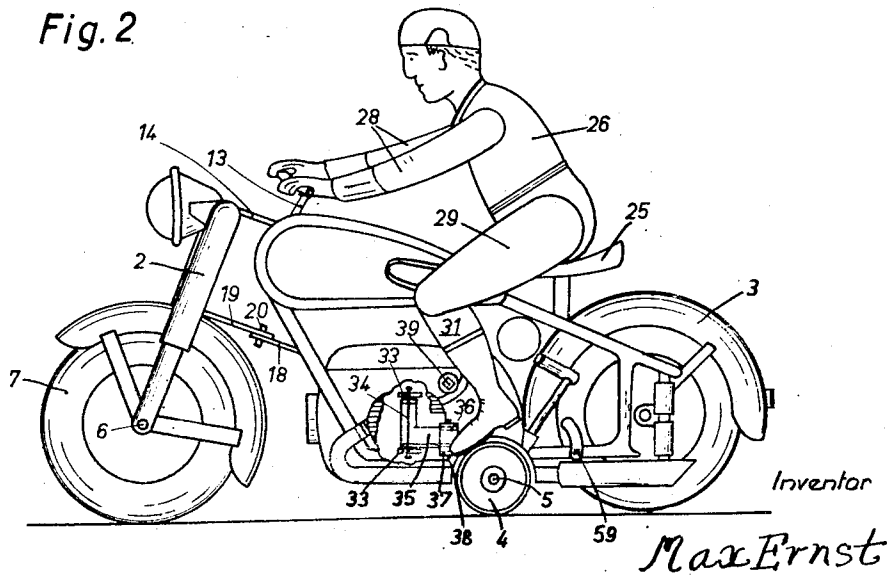


Fig. 2



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Fig. 3

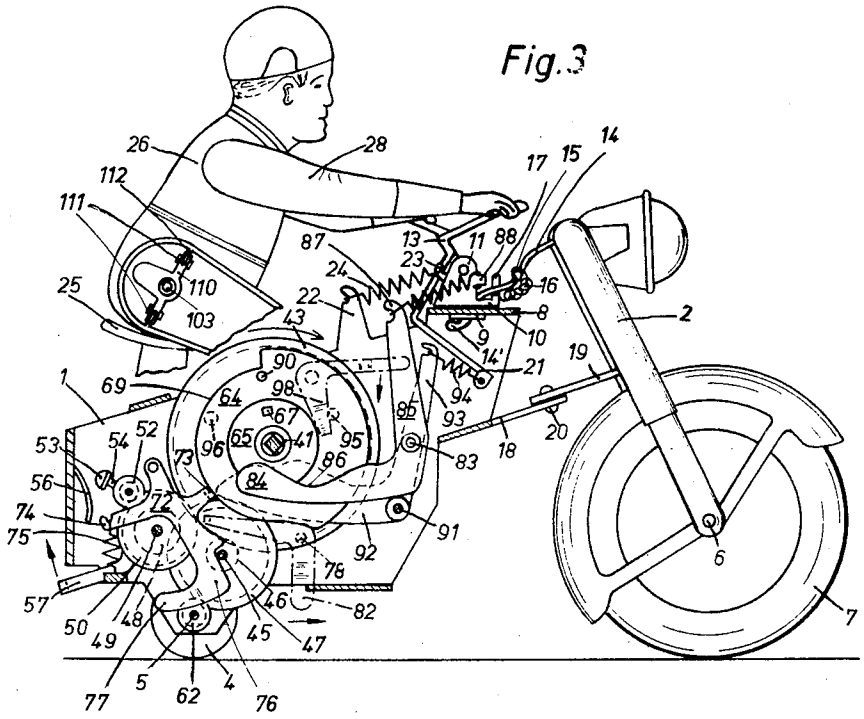
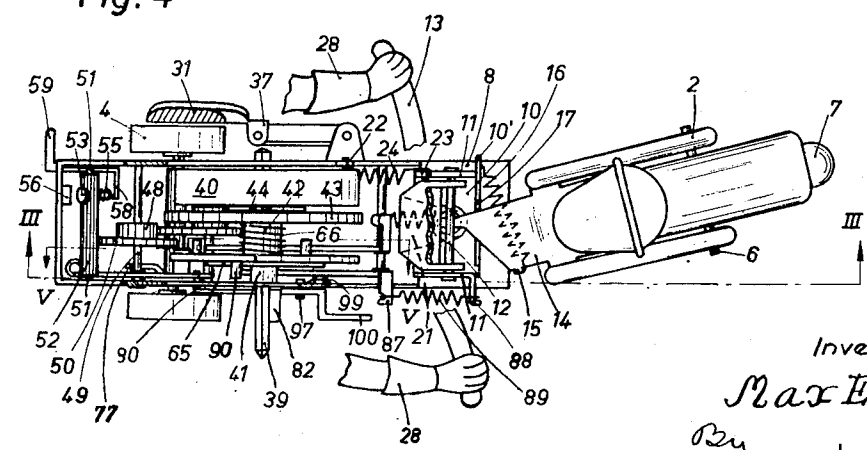


Fig. 4



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Fig. 5

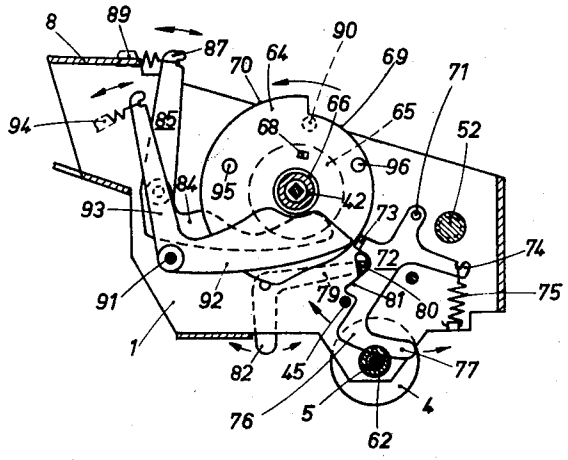
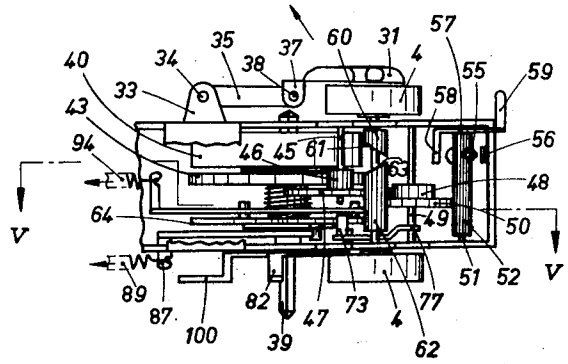


Fig. 6



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Fig. 7

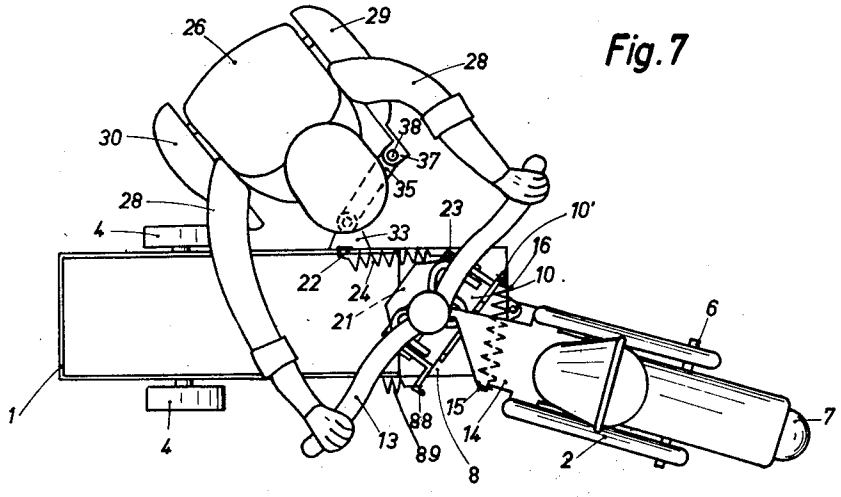


Fig. 8

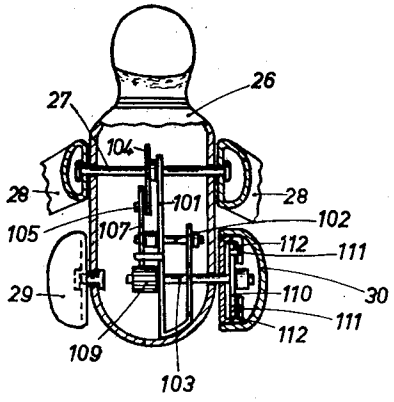
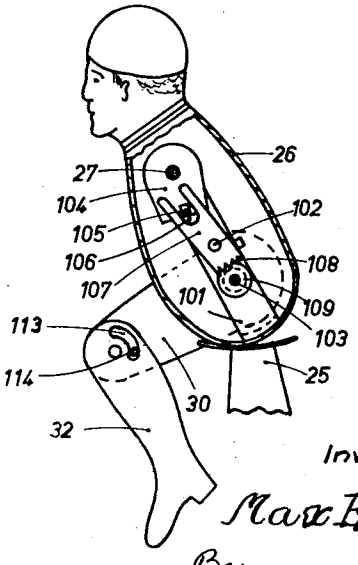


Fig. 9



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United States Patent Office 2,814,908 Patented Dec. 3, 1957

2,814,908

TOY MOTOR CYCLE WITH MOUNTING AND DISMOUNTING CYCLIST

Max Ernst, Nurnberg, Germany

Application June 21, 1955, Serial No. 516,991

14 Claims. (Cl. 46—107)

This invention relates to certain new and useful improvements in a toy motor cycle with mounting and dismounting cyclist and is a continuation-in-part of the application filed by me on August 31, 1951, Serial No. 244,663, now abandoned, and embodies improvements in the art thereover.

My American Patent 2,603,911 describes a spring motor driven toy motor cycle with a cyclist seated thereon which toy carries out the following functions: the motor cycle stops after a certain running time, the cyclist dismounts from the cycle and stands beside it; after a certain time has elapsed, the cyclist again mounts and the motor cycle resumes its travel. This procedure continues until the spring motor has run down.

The present invention relates to a toy motor cycle with cyclist which also carries out the above mentioned functions but which incorporates a number of improvements which result in better functioning of the toy and make the toy considerably more interesting.

An important feature of the invention consists in that the mounting and dismounting operation of the cyclist figure is effected in that the toy motor cycle is provided with a handle bar capable of being turned about two axes, with the result that the transmission mechanism for initiating and controlling the mounting and dismounting operation of the cyclist is no longer visible from the outside.

Another feature of the invention consists in the provision of ground-engaging driving wheels and a coupling mechanism therefor which coupling mechanism can be engaged and disengaged by hand by a special lever for stopping and restarting the toy motor cycle.

Yet another feature of the invention consists in that by means of another lever on the toy motor cycle, the transmission mechanism provided for controlling the mounting and dismounting operation of the cyclist can be cut out. By throwing over these two levers the toy can perform, in addition to the functions already mentioned, the following new functions:

(*a*) While the spring motor continues to run down the motor cycle comes to a standstill and the cyclist remains seated thereon;

(*b*) While the spring motor continues to run down the motor cycle is in a stopped position and the cyclist mounts and dismounts;

(*c*) With the spring motor running down the motor cycle moves forward without stopping and without the cyclist mounting and dismounting.

The invention will now be described in detail with reference to the accompanying drawings, in which:

Fig. 1 shows a toy motor cycle with a cyclist figure sitting thereon, in side elevation viewed from the right with casing partly removed;

Fig. 2 shows the toy motor cycle with cyclist sitting thereon, in side elevation viewed from the left with a portion of the casing also removed;

Fig. 3 is a fragmentary side elevational view, on a larger scale and partly in section, of the toy on the line III—III in Fig. 4;

Fig. 4 is a fragmentary top plan view of the toy with certain parts broken away;

Fig. 5 is a section through the driving mechanism taken on lines V—V of Figs. 4 and 6, respectively;

Fig. 6 shows part of the driving mechanism viewed from the left;

Fig. 7 is a top plan view of the toy with the cyclist figure dismounted and standing beside the cycle, a number of details being omitted;

Fig. 8 shows the trunk of the cyclist figure, viewed from the rear, partly in section; and

Fig. 9 shows the trunk of the cyclist figure in sitting position in side elevation, viewed from the left, and partly in section.

As shown in Figs. 1 to 4 the toy motor cycle according to the invention consists substantially of a frame casing **1** formed by two vertical side walls and a number of horizontal cross connections interconnecting these two side walls. The frame casing serves for accommodating the driving mechanism and for securing a front wheel fork **2** and two sheet metal casing halves **3**. The toy motor cycle rests on the one hand on two ground-engaging driving wheels **4** partly located within the sheet metal casing **3** and rigidly connected by a driving shaft **5** and on the other hand on a front wheel **7** freely rotatable about an axle **6** in the front wheel fork **2**. The rear wheel is merely a dummy and pressed in the sheet metal casing, the lowest point of its periphery being held a slight distance above the ground, as is clearly shown in Figs. 1 and 2. Above a cross plate **8** horizontally arranged in the forward upper portion of the frame casing and interconnecting the two side walls thereof a multiangled hinge-piece **10** made of sheet metal is horizontally pivotable about a hollow rivet **9**. This hinge-piece **10** has two lateral upwardly bent flaps **11** on which a handle bar **13**, made of a sheet metal stamping, is mounted by means of a bolt **12** so that it can pivot in vertical direction about this bolt **12**. The front wheel fork **2** has on its upper end a rearwardly bent multiangle flap **14** having a hook shaped end **14'** which extends through the hollow rivet **9** so that the flap **14** can turn in the hollow rivet **9**. On the left hand front end of the hinge-piece **10** a hook **10'** is formed and on the right hand side of the flap **14** there is also a hook **15** between which hooks **10'** and **15** a spiral spring **16** is stretched. Moreover, an abutment **17** is provided on the front end of the hinge-piece **10** against which abutment the flap **14** is held in contact by the pull exerted by the spiral spring **16** so that the front wheel fork **2** is forced slightly to the left.

A forwardly extending flap **18** on the frame casing **1** and a rearwardly extending flap **19** on the front wheel fork **2** are hingedly connected at their free ends by a hollow rivet **20** and serve for additionally securing the front wheel fork **2**. The front wheel fork **2** can thus swing to the right against the force of the spring **16** about the axes of the two hollow rivets **9** and **20**. When the hinge-piece **10** swings to the right the front wheel fork **2** will also be moved to the right by means of the abutment **17**. The swinging movement of the hinge-piece **10** and consequently of the fork **2** is limited by a downwardly and then forwardly bent flap **21** on the hinge-piece **10**, which comes into contact with the rear edge of the cross plate **8**. To fix the hinge-piece **10** in this position a spiral spring **24** is stretched between a hook **22** provided on the frame casing **1** and a hook **23** provided on the left rear end of the hinge-piece **10**.

For carrying the cyclist figure, a saddle **25** formed as a sheet metal stamping is secured to the upper side of the metal casing **3** and on this saddle, the trunk **26**

of the cyclist composed of two sheet metal halves sits in a slightly bowed position. At the height of the shoulders, a shaft 27 extends transversely through the trunk 26 and is rigidly connected at each of its ends to one of the arms 28 of the cyclist. The arms 28 consisting of a sheet metal stamping are rigidly connected to the handle bar 13. At the height of the hip joint, two thighs 29 and 30 are arranged independently oscillatable, one on each side of the trunk 26. A left shank 31 is hinged to the left thigh 29 and a right shank 32 to the right thigh 30. The toe of the left foot is hingedly connected with the frame casing 1 in the following manner:

Between two outwardly bent flaps 33 on the left side wall of the frame casing 1, an elbow lever 35 is horizontally pivoted on a vertical pin 34 interconnecting the two flaps 33. The free end of this elbow lever 35 has two outwardly bent flaps 36 and the toe of the left foot has two inwardly bent flaps 37 which flaps 36 and 37 are hingedly connected with each other by a vertical pin 38, as is clearly shown in Fig. 2. The foot of the cyclist can therefore swing both outwardly and inwardly in a horizontal plane about the pin 38 and also about the pin 34. Owing to the play existing in the flaps, the foot can also swing slightly about a horizontal axis so that when the cyclist is dismounting the left leg can assume a stretched position and in sitting position, the position shown in Fig. 2.

The right thigh 30 is given its bent and stretched positions by means of an oscillating mechanism hereinafter described and the right shank 32 is brought into its bent position in that the spring motor of the toy has a square winding shaft 39 which projects slightly beyond the right side of the motor cycle so that the movement of the right leg in forward direction is restricted.

For driving the toy motor cycle and the movements of the cyclist figure, a spring motor is provided in which a spiral spring 40 is fixed at its outer end on the frame casing 1 and at its inner end on the square winding shaft 39 in known manner. The square winding shaft 39 mounted in and extending transversely through the frame casing 1 is rotatable in a stepped sleeve 41, 42 on which a gear wheel 43 is rigidly mounted. A locking member 44 is rigidly connected with the square winding shaft 39 and engages in recesses in the gear wheel 43 so that it transmits the force of the wound spring 40 to the gear wheel 43 in known manner. A shaft 45 is likewise mounted in the frame casing 1. A pinion 46 and a gear wheel 47 are rigidly connected to the shaft 45. The pinion 46 meshes with the gear wheel 43 and the gear wheel 47 meshes with a pinion 48 secured on a shaft 49 with which a gear wheel 50 is rigidly connected. A pinion 52 provided with journals 51 also meshes with the gear wheel 50. As is clearly shown in Figs. 3 and 4 the pinion 52 has near its left end a bore extending transversely to its axis which bore accommodates a pin 54 carrying at one end a flyweight 53. A small spiral spring 55 is slipped over the other end of the pin 54, which spring 55 bears at one end against the pinion 52 and at its other end against the other end of the pin 54 which is flat riveted. On a vertically extending rear transverse wall interconnecting the two side walls of the frame casing 1 there is an inwardly bent flap 56 against which the flyweight 53 strikes as the spring motor runs down. The flap 56, the flyweight 53, pin 54, and spring 55 serve as rundown brake and for noise producing. On the left side wall of the frame casing 1 a lever 57, see Fig. 6, is pivotally mounted which can swing an inwardly bent flap 58 into the path of movement of the braking parts 53, 54, 55 through the intermediary of a lever arm 59 projecting slightly outwards beyond the sheet metal casing 3 and serving for starting and stopping the spring motor.

As shown in Fig. 6 the following arrangement is provided for coupling the ground-engaging driving wheels 4 with the driving mechanism, i. e. the spring motor: On the shaft 5 at the ends of which the wheels 4 are fixed, a clutch member 60 is mounted, one face of which lies adjacent the left side wall of the frame casing 1. The other face of the clutch member 60 forms a flat surface 61 which extends at an angle to the axis of the shaft 5. The shaft 5 also carries a pinion 62 which is freely rotatable about the shaft 5 and shiftable in longitudinal direction thereon. The pinion 62 meshes permanently with the gear wheel 47 of the driving mechanism and has on its end, facing the clutch member 60, a flat surface 63 extending at an angle to the axis of the shaft 5. The pinion 62 is of such length that on sliding away from the clutch member 60 it can turn freely, thereby uncoupling the ground-engaging driving wheels 4 from the drive. When the pinion 62 is shifted towards the clutch member 60 the wheel shaft 5 and with it the ground-engaging driving wheels 4 are coupled with the drive through the intermediary of the two inclined flat surfaces 61 and 63.

For controlling the movement of the ground-engaging driving wheels 4 the following parts are provided: A cam disk 64 is axially shiftable and freely rotatable on the thicker portion 42 of the stepped sleeve 41, 42, and on the thinner portion 41 of this stepped sleeve a disk 65 is fixed, the diameter of which is smaller than that of the cam disk 64. A spiral spring 66 is provided on the stepped sleeve portion 42 between the gear wheel 43 and the cam disk 64 and maintains the cam disk 64 in contact with the disk 65 keyed on the sleeve portion 41. The disk 65 has on the side facing the cam disk 64, a nose 67 and the cam disk 64 at the same radial distance a corresponding recess 68 in which the nose 67 can engage when the two disks 64 and 65 are in a certain position. When the nose 67 is in engagement, the cam disk 64 is therefore carried along by the running-down spring motor. By lateral displacement of the cam disk 64 against the action of the spiral spring 66 this coupling can, however, be disengaged so that the cam disk 64 can be locked, whereas the spring motor continues to run down. As shown in Figs. 3 and 5, the edge of the cam disk 64 is constructed as a curved guide which consists substantially of a section 69 of smaller diameter and a section 70 of larger diameter. Fig. 5 shows that the two curved sections 69, 70 merge gradually the one into the other and are discontinuous at only one point. A multi-armed lever 72 pivotable about a pin 71 on the inner side of the right side wall of the frame casing 1 cooperates with this cam disk and has a bent over flap 73 which can be brought to bear against the edge of the cam disk 64. The lever 72 also has an arm 74 provided with a notch to which a helical spring 75 is attached at one end, the other end being hooked on to the frame casing 1. The lever 72 is provided at its lower end with an angular extension 76 the free end 77 of which is bent inwards at an incline and serves for bringing the pinion 62 slidable on the shaft 5 into contact with the clutch member 60. On the outer side of the right side wall of the frame casing 1 an elbow lever 79, 82 is oscillatable about an axle 78, one arm 79 of this elbow lever, projecting inwards through a slot in the frame casing, has a bent over flap 80 which can slide on an inclined edge 81 formed by the lever 72. The free end of the other arm 82 of the elbow lever projects through a slot in the right hand metal casing half 3. This elbow lever 79, 82 serves for positively swinging the lever 72 in clockwise direction as shown in Fig. 3. By swinging the elbow lever 79, 82 in counter-clockwise direction in Fig. 3 the lever 72 will first be brought into a position in which it is lifted off the cam disk 64 and the coupling between the pinion 62 and the clutch member 60 is permanently disengaged. If, on the other hand, the lever 79, 82 is swung in clockwise direction as shown in Fig. 3 the flap 73 of the lever 72 will bear against the curved sections 69, 70 under the action of the spring 75. In this case the coupling between the pinion 62 and the clutch

member 60 is alternately engaged and disengaged as the spring motor runs down.

For controlling the movement of the handle bar 13 the following arrangement is provided: On the inner side of the right hand side wall of the frame casing 1 an elbow lever 84, 85 is oscillating about a pin 83, this lever 84, 85 having on the upper edge of its substantially horizontal arm 84 a cam contour 86. The upper end of the substantially vertical arm 85 is constructed in the form of a hook 87. A hook 88 is also formed on the right hand front end of the hinge-piece 10. The hooks 87 and 88 are connected by a spiral spring 89. On the right side of the cam disk 64 a stud 90 is provided which slides on the cam contour 86 of the arm 84 of the elbow lever 84, 85 and swings this lever in counter-clockwise direction, as shown in Fig. 3. This swinging movement is transmitted to the hinge-piece 10 by the spring 89 and consequently to the fork 2 and the handle bar 13 which is thus swung to the right. Furthermore, a shaft 91 is mounted in the frame casing 1 below the pin 83 and carries an elbow lever 92, 93. The upper end of the arm 93 of the elbow lever 92, 93 is also in this case constructed as a hook and connected by a spiral spring 94 to the front end of the flap 21 on the hinge-piece 10. The upper edge of the horizontal arm 92 of the elbow lever 92, 93 is likewise provided with a cam contour. Two studs 95 and 96 are provided on the left side of the cam disk 64 in Fig. 5 for actuating the elbow lever 92, 93 and slide on the cam contour of the arm 92 and thereby swing the elbow lever 92, 93 in counter-clockwise direction, as shown in Fig. 3. The studs 95, 96 will consequently shift the elbow lever 92, 93 successively twice in counter-clockwise direction with the result that the handle bar 13 will be swung about the bolt 12 in clockwise direction in Fig. 4. By this movement the cyclist figure will be swung a certain distance about the bolt 12 and raised and again lowered.

The two studs 95, 96 are arranged at a certain angle apart substantially symmetrically to the stud 90 on the cam disk 64. Moreover the transition point between the surved sections 69 and 70 lies about on the same radius as the stud 90. The recess 68 in the cam disk 64 is also located near the stud 90. By this arrangement the elbow lever 92, 93 is first actuated by the stud 95 and the cyclist figure raised. Thereupon the elbow lever 84, 85 is actuated by the stud 90 and the cyclist figure swung laterally and then again lowered. As the cam disk 64 continues to rotate in clockwise direction in Fig. 3 the cyclist figure will be again raised by the stud 96 and, as the stud 90 slides off the cam contour 86, the cyclist is swung back into its initial position. Shortly thereafter the lever 72 drops from the cam section 70 on to the cam section 69 with the result that the lever 72 is swung by the spring 75 so that the coupling for the wheels 4 is again engaged by means of the lever parts 76, 77. The motorcycle then again starts moving with the cyclist sitting thereon.

To enable the cam disk 64 to be stopped, an elbow lever 98, 100 is oscillatable about a pin 97 on the outer side of the right hand side wall of the frame casing 1 and one arm 98 of this elbow lever projects inwards through a slot in the frame casing 1 and forms at its free end an inwardly located offset member 99. The other arm 100 of the elbow lever 98, 100 leads outwardly and projects through a slot in the metal casing 3 from the frame casing 1. The elbow lever 98, 100 is so constructed that when swung in clockwise direction into the position shown in Fig. 3, the offset member 99 remains without influence. In this instance the nose 67 of the disk 65 engages the recess 68 in the cam disk 64. If the elbow lever 98, 100 is swung in counter-clockwise direction in Fig. 3, then the offset member is located in the path of movement of the stud 90. When the stud 90 comes into contact with the offset member 99 the cam disk 64 will be pressed inwardly so far that the parts 67, 68 become disengaged and the cam disk 64 is held in this position while the spring motor continues to run-down. In this position the cyclist figure is still on the saddle and the flap 73 of the lever 72 in contact with the cam section 69 so that in this position the clutch of the ground-engaging driving wheels 4 can be engaged and disengaged at will by the elbow lever 79, 82. Thus in this manner it is also possible to allow the toy motor cycle with the cyclist sitting thereon to run idle, that is tick over and also to run normally without the cyclist carrying out any mounting and dismounting movement.

If, however, the elbow lever 98, 100 is swung in clockwise direction in Fig. 3, the nose 67 on the disk 65, after having rotated through a certain angle, again engages in the recess 68 in the cam disk 64 with the result that the cam disk 64 is once more driven by the spring motor. If the elbow lever 79, 82 is now swung in counter-clockwise direction in Fig. 3, the lever 72 remains permanently raised off the cam disk 64, with the result that the ground-engaging driving wheels 4 are cut off from the drive. The motor cycle then remains stationary with the spring motor still running, while the cyclist figure alternately mounts and dismounts.

In order to swing the right leg of the cyclist figure towards the rear before dismounting and remounting, the following arrangement is provided: Within the trunk 26 of the cyclist figure a frame 101 is fixed through which frame 101 the shaft 27 to which the arms 28 of the cyclist figure are firmly connected, extends. Shafts 102 and 103 are rotatably mounted in the frame 101. The shaft 27 is also rigidly connected to a lever 104 which has a bent over flap 105 engaging in a gap 106 provided in the upper end of a two-armed lever 107. The lower end of the two-armed lever 107 carries a toothed segment 108 which meshes with a pinion 109 on the shaft 103. The shaft 103 extends through the right-hand side of the trunk 26 in Fig. 8 and the thigh 30 and is rigidly connected at its outer end with a shaped part 110 serving for firmly carrying the thigh 30. The shaped part 110 has upwardly bent flaps 111 between which flaps 112 on the sheet metal shaped part representing the thigh 30 are bent in. The right thigh 30 has an arcuate slot 113 in which a nose 114 projecting from the shank 32 engages. The arcuate slot 113 and the nose 114 serve for limiting the deflection angle of the shank 32.

The arrangement accommodated in the cyclist figure operates in the following manner: If the handle bar 13 and the arms 28 connected therewith are swung upwards about the bolt 12 of the hinge-piece 10, the lower portion of the trunk 26 is bowed downwards towards the front by the weight of the body of the cyclist figure and the fact that the left foot is secured to the elbow lever 35; as a result, the pinion 109 and therewith the thigh 30 are swung rearwardly through the intermediary of the lever 104 and the two-armed lever 107.

The nose 114 prevents the shank 32 from being bent forward. In this manner it is possible, therefore, after lifting the cyclist figure to swing it laterally and bring it beside the motor cycle. The same procedure takes place before the cyclist figure is swung back on to the saddle, when it is again swung upwards about the bolt 12. Consequently it is merely necessary to shape the contour of the cams of the two elbow levers 92, 93 and 84, 85 so that in the swung forward position the cyclist figure assumes an upright position and in the inwardly swung position it assumes a sitting position with thighs bent forward at an angle.

From the above detailed description of the invention, it is believed that the construction will at once be apparent, and while there is herein shown and described a preferred embodiment of the invention, it is nevertheless to be understood that minor changes may be made therein without departing from the spirit and scope of the invention as claimed.

I claim:

1. A toy motor cycle with mounting and dismount-

ing cyclist comprising in combination a frame casing consisting of two vertical side walls and a number of horizontal cross connections, a front wheel and a front wheel fork for supporting the forward portion of said frame casing, a handle bar movably arranged above the forward portion of the frame casing, ground-engaging driving wheels carried by said frame casing, a spring motor operatively connected to and actuating the ground-engaging driving wheels, a square winding shaft for winding up said spring motor, said toy including a cyclist figure having a trunk carrying arms and legs movable with respect to the trunk, said arms being rigidly connected to the handle bar and one of said legs being hingedly connected to one of the side walls of the frame casing, a transmission mechanism actuated by the spring motor and the handle bar for raising and lowering and laterally swinging the toy cyclist, one of the cross connections being in the form of a horizontal plate in the forward upper part of the frame casing, a hinge-piece having two upwardly bent flaps above said horizontal plate, a hollow rivet vertically extending through the horizontal plate and the hinge-piece and allowing swinging of the hinge-piece in a horizontal plane, a bolt connecting the two flaps of the hinge-piece and carrying the handle bar and allowing swinging of the handle bar in a vertical plane, and a cam disk operatively connected with the spring motor and cooperating with the transmission mechanism to swing the handle bar upwards about the said bolt and swing the said hinge-piece laterally.

2. A toy motor cycle with mounting and dismounting cyclist comprising in combination a frame casing consisting of two vertical side walls and a number of horizontal cross connections, a front wheel and a front wheel fork for supporting the forward portion of said frame casing, a handle bar movably arranged above the forward portion of the frame casing, ground-engaging driving wheels carried by said frame casing, a spring motor operatively connected to and actuating the ground-engaging driving wheels, a square winding shaft for winding up said spring motor, said toy including a cyclist figure having a trunk carrying arms and legs movable with respect to the trunk, said arms being rigidly connected to the handle bar and one of said legs being hingedly connected to one of the side walls of the frame casing, a transmission mechanism actuated by the spring motor and the handle bar for raising and lowering and laterally swinging the toy cyclist, the transmission mechanism for raising and lowering and laterally swinging the cyclist figure including a cam disk operatively connected with the spring motor and having on one side two studs, and an elbow lever oscillatable within the frame casing of the toy and having on one of its arms a cam contour cooperating with said studs, the other arm of the elbow lever being articulated to a downwardly and then forwardly bent flap on the handle bar to swing the cyclist about a horizontal bolt.

3. A toy motor cycle with mounting and dismounting cyclist comprising in combination a frame casing consisting of two vertical side walls and a number of horizontal cross connections, a front wheel and a front wheel fork for supporting the forward portion of said frame casing, a handle bar movably arranged above the forward portion of the frame casing, ground-engaging driving wheels carried by said frame casing, a spring motor operatively connected to and actuating the ground-engaging driving wheels, a square winding shaft for winding up said spring motor, said toy including a cyclist figure having a trunk carrying arms and legs movable with respect to the trunk, said arms being rigidly connected to the handle bar and one of said legs being hingedly connected to one of the side walls of the frame casing, a transmission mechanism actuated by the spring motor and the handle bar for raising and lowering and laterally swinging the toy cyclist, the transmission mechanism for raising and lowering and laterally swinging the cyclist figure including a cam disk operatively connected with the spring motor and having on one side a stud, and an elbow lever pivotably mounted within the frame casing of the toy, one arm of this elbow lever having a cam contour cooperating with the said stud, the other arm of the elbow lever being articulated to a hinge-piece causing the front wheel fork of the toy motor cycle to carry out a turning movement about a vertically arranged hollow rivet connecting said hinge-piece to the frame casing.

4. A toy motor cycle with mounting and dismounting cyclist comprising in combination a frame casing consisting of two vertical side walls and a number of horizontal cross connections, a front wheel and a front wheel fork for supporting the forward portion of said frame casing, a handle bar movably arranged above the forward portion of the frame casing, ground-engaging driving wheels carried by said frame casing, a spring motor operatively connected to and actuating the ground-engaging driving wheels, a square winding shaft for winding up said spring motor, said toy including a cyclist figure having a trunk carrying arms and legs movable with respect to the trunk, said arms being rigidly connected to the handle bar and one of said legs being hingedly connected to one of the side walls of the frame casing, a transmission mechanism actuated by the spring motor and the handle bar for raising and lowering and laterally swinging the toy cyclist, a cam disk operatively connected with the spring motor, studs on both sides of said cam disk, two elbow levers one on each side of said cam disk and each having an arm cooperating with the studs of the cam disk, the other arm of one of said elbow levers articulated to a downwardly and then forwardly bent flap on the handle bar to carry out a swinging movement of the cyclist about a horizontal bolt and the other arm of the second elbow lever articulated to a hinge-piece causing the front wheel fork of the toy motor cycle to carry out a turning movement about a vertically arranged hollow rivet connecting said hinge-piece to the frame casing of the toy, and springs yieldably connecting the last mentioned other arms of the elbow levers to the downwardly and then forwardly bent flap on the handle bar and to a hook on the hinge-piece, respectively.

5. A toy motor cycle with mounting and dismounting cyclist comprising in combination a frame casing consisting of two vertical side walls and a number of horizontal cross connections, a front wheel and a front wheel fork for supporting the forward portion of said frame casing, a handle bar movably arranged above the forward portion of the frame casing, ground-engaging driving wheels carried by said frame casing, a spring motor operatively connected to and actuating the ground-engaging driving wheels, a square winding shaft for winding up said spring motor, said toy including a cyclist figure having a trunk carrying arms and legs movable with respect to the trunk, said arms being rigidly connected to the handle bar and one of said legs being hingedly connected to one of the side walls of the frame casing, a transmission mechanism actuated by the spring motor and the handle bar for raising and lowering and laterally swinging the toy cyclist, a sleeve rotatable on the square winding shaft of the spring motor and rigidly connected at one end to a recessed gear wheel for driving the ground-engaging driving wheels and at the other end to a disk, a locking member rigidly connected with the square winding shaft and engaging in the recesses in the gear wheel, a cam disk loosely rotatable on said sleeve, a spiral spring arranged on the sleeve and urging the cam disk against the disk, and a nose provided on one of said disks and cooperating with a recess in the other disk to couple the cam disk to the disk and consequently to the spring motor.

6. A toy motor cycle with mounting and dismount-

ing cyclist comprising in combination a frame casing consisting of two vertical side walls and a number of horizontal cross connections, a front wheel and a front wheel fork for supporting the forward portion of said frame casing, a handle bar movably arranged above the forward portion of the frame casing, ground-engaging driving wheels carried by said frame casing, a spring motor operatively connected to and actuating the ground-engaging driving wheels, a square winding shaft for winding up said spring motor, said toy including a cyclist figure having a trunk carrying arms and legs movable with respect to the trunk, said arms being rigidly connected to the handle bar and one of said legs being hingedly connected to one of the side walls of the frame casing, a transmission mechanism actuated by the spring motor and the handle bar for raising and lowering and laterally swinging the toy cyclist, a sleeve rotatable on the square winding shaft of the spring motor and rigidly connected at one end to a recessed gear wheel for driving the ground-engaging driving wheels and at the other end to a disk, a locking member rigidly connected with the square winding shaft and engaging in the recesses in the gear wheel, a cam disk loosely rotatable on said sleeve, a spiral spring arranged on the sleeve and urging the cam disk against the disk, a nose provided on one of said disks and cooperating with a recess in the other disk, and an elbow lever oscillatably mounted on the outer side of one side wall of the frame casing of the toy, one arm of this elbow lever projecting from the frame casing and serving as a handle whereas the other arm projects inwardly through a slot in the side wall and forms at its free end an offset member cooperating with a stud on the cam disk to uncouple said cam disk from the spring motor against the force of the spiral spring on the sleeve.

7. A toy motor cycle with mounting and dismounting cyclist comprising in combination a frame casing consisting of two vertical side walls and a number of horizontal cross connections, a front wheel and a front wheel fork for supporting the forward portion of said frame casing, a handle bar movably arranged above the forward portion of the frame casing, ground-engaging driving wheels carried by said frame casing, a spring motor operatively connected to and actuating the ground-engaging driving wheels, a square winding shaft for winding up said spring motor, said toy including a cyclist figure having a trunk carrying arms and legs movable with respect to the trunk, said arms being rigidly connected to the handle bar and one of said legs being hingedly connected to one of the side walls of the frame casing, a transmission mechanism actuated by the spring motor and the handle bar for raising and lowering and laterally swinging the toy cyclist, a driving shaft connecting the ground-engaging driving wheels, a fixed clutch member and a freely rotatable and shiftable clutch member on said driving shaft, the freely rotatable and shiftable clutch member being constructed as a pinion and in permanent mesh with a gear wheel of the spring motor, and means controlled by a cam disk provided in the frame casing for engaging and disengaging said clutch members.

8. A toy motor cycle with mounting and dismounting cyclist comprising in combination a frame casing consisting of two vertical side walls and a number of horizontal cross connections, a front wheel and a front wheel fork for supporting the forward portion of said frame casing, a handle bar movably arranged above the forward portion of the frame casing, ground-engaging driving wheels carried by said frame casing, a spring motor operatively connected to and actuating the ground-engaging driving wheels, a square winding shaft for winding up said spring motor, said toy including a cyclist figure having a trunk carrying arms and legs movable with respect to the trunk, said arms being rigidly connected to the handle bar and one of said

legs being hingedly connected to one of the side walls of the frame casing, a transmission mechanism actuated by the spring motor and the handle bar for raising and lowering and laterally swinging the toy cyclist, a driving shaft connecting the ground-engaging driving wheels, a fixed clutch member and a freely rotatable and shiftable clutch member on said driving shaft, the freely rotatable and shiftable clutch member being constructed as a pinion and in permanent mesh with a gear wheel of the spring motor, an oscillatable multi-armed lever provided in the frame casing and cooperating with a cam disk being also provided in the frame casing and having a cam section of smaller and a cam section of larger diameter on its periphery against which cam sections a bent over flap of the multi-armed lever is maintained in contact by a helical spring, said multi-armed lever having an inwardly bent angular extension adapted to bring, in accordance with the position of the bent over flap with respect to the cam disk, the rotatable and shiftable clutch member into and out of engagement with the fixed clutch member to connect and disconnect the ground-engaging driving wheels of the toy with the spring motor.

9. A toy motor cycle with mounting and dismounting cyclist comprising in combination a frame casing consisting of two vertical side walls and a number of horizontal cross connections, a front wheel and a front wheel fork for supporting the forward portion of said frame casing, a handle bar movably arranged above the forward portion of the frame casing, ground-engaging driving wheels carried by said frame casing, a spring motor operatively connected to and actuating the ground-engaging driving wheels, a square winding shaft for winding up said spring motor, said toy including a cyclist figure having a trunk carrying arms and legs movable with respect to the trunk, said arms being rigidly connected to the handle bar and one of said legs being hingedly connected to one of the side walls of the frame casing, a transmission mechanism actuated by the spring motor and the handle bar for raising and lowering and laterally swinging the toy cyclist, a driving shaft connecting the ground-engaging driving wheels, a fixed clutch member and a freely rotatable and shiftable clutch member on said driving shaft, said latter clutch member being constructed as a pinion and in permanent mesh with a gear wheel of the spring motor, an oscillatable multi-armed lever provided in the frame casing and cooperating with a cam disk having a cam section of smaller and a cam section of larger diameter on its periphery against which a bent over flap of the multi-armed lever is maintained in contact by a helical spring, said multi-armed lever having an inwardly bent angular extension cooperating with the freely rotatable and shiftable clutch member, an elbow lever oscillatably mounted on the frame casing of the toy, one of the arms of this elbow lever projecting from the casing and forming a handle, whereas the other arm projects into the interior of the frame casing and has a bent over flap slidable on an inclined edge of the multi-armed lever to bring this multi-armed lever out of contact with the cam disk and disengage the said two clutch members.

10. A toy motor cycle with mounting and dismounting cyclist comprising in combination a frame casing consisting of two vertical side walls and a number of horizontal cross connections, a front wheel and a front wheel fork for supporting the forward portion of said frame casing, a handle bar movably arranged above the forward portion of the frame casing, ground-engaging driving wheels carried by said frame casing, a spring motor operatively connected to and actuating the ground-engaging driving wheels, a square winding shaft for winding up said spring motor, said toy including a cyclist figure having a trunk carrying arms and legs movable with respect to the trunk, said arms being rigidly connected to the handle bar and one of said legs being hingedly connected to one of the side walls of

the frame casing, a transmission mechanism actuated by the spring motor and the handle bar for raising and lowering and laterally swinging the toy cyclist, a driving shaft connecting the ground-engaging driving wheels, a fixed clutch member and a freely rotatable and shiftable clutch member on said driving shaft the freely rotatable and shiftable clutch member being constructed as a pinion and in permanent mesh with a gear wheel of the spring motor, an oscillatable multi-armed lever provided in the frame casing and cooperating with a cam disk having a cam section of smaller and a cam section of larger diameter on its periphery against which a bent over flap of the multi-armed lever is maintained in contact by a helical spring, an elbow lever oscillatably mounted on the outer side of one side wall of the frame casing of the toy, one arm of this elbow lever projecting from the frame casing and forming a handle whereas the other arm of this second elbow lever projects inwardly through a slot in the side wall and forms at its free end an offset member cooperating with a stud on the cam disk to uncouple said cam disk from the spring motor when the cam disk is in a position in which the bent over flap of the multi-armed lever is within the range of the cam section of the cam disk having the smaller diameter.

11. A toy motor cycle with mounting and dismounting cyclist comprising in combination a frame casing consisting of two vertical side walls and a number of horizontal cross connections, a front wheel and a front wheel fork for supporting the forward portion of said frame casing, a handle bar movably arranged above the forward portion of the frame casing, ground-engaging driving wheels carried by said frame casing, a spring motor operatively connected to and actuating the ground-engaging driving wheels, a square winding shaft for winding up said spring motor, said toy including a cyclist figure having a trunk carrying arms and legs movable with respect to the trunk, said arms being rigidly connected to the handle bar and one of said legs being hingedly connected to one of the side walls of the frame casing, a transmission mechanism actuated by the spring motor and the handle bar for raising and lowering and laterally swinging the toy cyclist, an elbow lever oscillatable on the frame casing of the toy and hingedly connected to one of the legs of the cyclist figure, means in the trunk of the cyclist figure for swinging the other leg rearwardly and raising the figure as the handle bar and the arms are swung about a horizontal bolt, a shaft extending through the upper part of the cyclist figure and having the arms of the figure fixed thereon, a lever rigidly connected to said shaft, said shaft having an extension engaging in a gap in the upper end of a two-armed lever provided with a toothed segment meshing with a pinion rigidly connected to a shaft in turn rigidly connected against rotation with the oscillatable leg of the cyclist figure.

12. A toy motor cycle with mounting and dismounting cyclist, comprising in combination a frame casing consisting of two vertical side walls and a number of horizontal cross connections, a front wheel and a front wheel fork for supporting the forward portion of said frame casing, a handle bar movably arranged above the forward portion of the frame casing, ground-engaging driving wheels carried by said frame casing, a spring motor operatively connected to and actuating the ground-engaging driving wheels, a square winding shaft for winding up said spring motor, said toy including a cyclist figure having a trunk carrying arms and legs movable with respect to the trunk, said arms being rigidly connected to the handle bar and one of said legs being hingedly connected to one of the side walls of the frame casing, a transmission mechanism actuated by the spring motor and the handle bar for raising and lowering and laterally swinging the toy cyclist, an elbow lever oscillatable on the frame casing of the toy and hingedly connected to one of the legs of the cyclist figure, means in the trunk of the cyclist figure for swinging the other leg rearwardly and raising the figure as the handle bar and the arms are swung about a horizontal bolt, said means having an arcuate slot in the thigh and a nose on the shank of the leg which swings rearwardly, said nose engaging said slot for limiting the deflection angle of the shank.

13. A toy motor cycle with mounting and dismounting cyclist, comprising in combination a frame casing consisting of two vertical side walls and a number of horizontal cross connections, a front wheel and a front wheel fork for supporting the forward portion of said frame casing, a handle bar movably arranged above the forward portion of the frame casing, ground-engaging driving wheels carried by said frame casing, a spring motor operatively connected to and actuating the ground-engaging driving wheels, a square winding shaft for winding up said spring motor, said toy including a cyclist figure having a trunk carrying arms and legs movable with respect to the trunk, said arms being rigidly connected to the handle bar and one of said legs being hingedly connected to one of the side walls of the frame casing, a transmission mechanism actuated by the spring motor and the handle bar for raising and lowering and laterally swinging the toy cyclist, one of the cross connections being in the form of a horizontal plate in the forward upper part of the frame casing, a hinge-piece having two upwardly bent flaps above said horizontal plate, a hollow rivet vertically extending through the horizontal plate and the hinge-piece and allowing swinging of the hinge-piece in a horizontal plane, a bolt connecting the two flaps of the hinge-piece and carrying the handle bar and allowing swinging of the handle bar in a vertical plane, a hook on the frame casing and a second hook on the hinge-piece carrying the bolt, a spiral spring arranged between said hooks and holding the hinge-piece in abutment with the frame casing to determine the basic position of the handle bar and the front wheel fork of the toy motor cycle, and a cam disk operatively connected with the spring motor and cooperating with the transmission mechanism to swing the handle bar upwards about the said bolt and swing the said hinge-piece laterally against the force of the spiral spring.

14. A toy motor cycle with mounting and dismounting cyclist, comprising in combination a frame casing consisting of two vertical side walls and a number of horizontal cross connections, a front wheel and a front wheel fork for supporting the forward portion of said frame casing, a handle bar movably arranged above the forward portion of the frame casing, ground-engaging driving wheels carried by said frame casing, a spring motor operatively connected to and actuating the ground-engaging driving wheels, a square winding shaft for winding up said spring motor, said toy including a cyclist figure having a trunk carrying arms and legs movable with respect to the trunk, said arms being rigidly connected to the handle bar and one of said legs being hingedly connected to one of the side walls of the frame casing, a transmission mechanism actuated by the spring motor and the handle bar for raising and lowering and laterally swinging the toy cyclist, one of the cross connections being in the form of a horizontal plate in the forward upper part of the frame casing, a hinge-piece having two upwardly bent flaps above said horizontal plate, a hollow rivet vertically extending through the horizontal plate and the hinge-piece and allowing swinging of the hinge-piece in a horizontal plane, a bolt connecting the two flaps of the hinge-piece and carrying the handle bar and allowing swinging of the handle bar in a vertical plane, a rearwardly extending flap on the front wheel fork and a forwardly extending flap on the frame casing, a hinge joint at the free ends of said flaps, an upper rearwardly extending multi-angle flap also provided on the front wheel fork and rotatable in said hollow rivet, a hook formed on one end of the hinge-piece, a second hook formed on the opposite

side of said upper multiangle flap, a spiral spring stretched between said hooks for maintaining the upper multiangle flap and therefore the front wheel fork in contact with an abutment formed on the hinge-piece.

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