

## PATENT SPECIFICATION



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## PROVISIONAL SPECIFICATION

## Improvements in or relating to Handle-bars for Cycles and the like

We, NORTON MOTORS LIMITED, a British Company, of Bracebridge Street, Aston, Birmingham, 6, and EDGAR MARTIN FRANKS, British Subject, of the Company's address, do hereby declare the nature of this invention to be as follows:—

This invention relates to improvements in handle-bars for cycles, motor-cycles and the like and is particularly concerned with the mounting of the handle-bars in such a manner as to insulate them effectively from road shocks and at the same time to give safe and accurate steering.

According to our invention the handle-bars of a cycle, motor-cycle or the like are mounted in a pair of substantially horizontal spaced arms or lugs mounted on the steering head by means of annular rubber sleeves bonded to inner and outer tubular bushes of which the inner bushes are keyed against angular movement relative to the steering head while the outer bushes are clamped in split lugs or the like incorporated with the arms.

Thus movement of the bars in a substantially vertical direction can take place through resilient torsional stressing of the rubber sleeves which are not compressed initially and the bars are effectively insulated from road shocks.

In one preferred practical embodiment of our invention a fitting carried by or forming part of the steering head has a machined cylindrical part or anchorage extending laterally from each side, the two cylindrical parts being in axial alignment.

Rubber sleeves of substantial radial thickness are bonded to inner and outer metal bushes and the inner bush is a sliding fit on the cylindrical anchorage on the

steering head. The inner end of the inner bush is dogged, notched or otherwise formed to engage with complementary parts on the anchorage to hold the bush against angular movement on the anchorage, and the bush is clamped against a shoulder on the fitting at the inner end of the anchorage by a nut screwed on to the outer end of the anchorage.

A divided arm of which the two parts are adjustably secured together by studs or bolts has at one end an annular lug of such a diameter as to receive the outer bush on which it is tightly clamped, and at the other end the arm has a similar lug in which the handle-bars are adapted to be clamped. Thus the arms can be adjusted angularly relative to the outer bushes to vary the height of the handle-bars, and the handle-bars can also be adjusted angularly relative to the arms.

The shoulder at the inner end of each anchorage on the steering head is preferably elliptical with its major axis horizontal. The length of the minor axis is less than the diameter of the outer bush and that of the major axis is equal to or slightly greater than the diameter of the bush so that in steering movements of the handle-bars the inner edge of the bush can engage with the shoulder at the front and rear to transmit the steering movement positively to the head, but the area of contact is not sufficient to interfere with the angular movement in a vertical direction of the handle-bars under road shocks.

Dated the 24th day of July, 1939.  
BARKER, BRETTELL & DUNCAN,  
Chartered Patent Agents,  
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## COMPLETE SPECIFICATION

## Improvements in or relating to Handle-bars for Cycles and the like

We, NORTON MOTORS LIMITED, a British Company, of Bracebridge Street, Aston, Birmingham, 6, and EDGAR MARTIN FRANKS, British Subject, of the Company's address, 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 improvements in handle-bars for cycles, motor-cycles and the like and is particularly concerned with the mounting of the handlebars in such a manner as to insulate them effectively

from road shocks and at the same time to give safe and accurate steering.

According to our invention the handle-bars of a cycle, motor-cycle or the like are mounted in a pair of substantially horizontal spaced arms or lugs mounted on the steering head by means of annular rubber sleeves bonded to inner and outer tubular bushes of which the inner bushes are keyed against angular movement relative to the steering head while the outer bushes are clamped in split lugs or the like incorporated with the arms.

Thus movement of the bars in a substantially vertical direction can take place through resilient torsional stressing of the rubber sleeves which are not compressed initially and the bars are effectively insulated from road shocks.

One preferred practical embodiment of our invention is illustrated by way of example in the accompanying drawings in which:—

Figure 1 is a plan in part section of the steering head and handle-bar mounting of a motor cycle.

Figure 2 is a side elevation in part section of one of the supporting arms for the handle-bars and its mounting.

Figure 3 is a fragmentary section on the line 3—3 of Figure 1.

In the drawings *a* is a forged or other fitting forming the upper part of the steering head assembly and adapted to be secured on the upper end of the steering tube of a motor-cycle. A short machined hollow cylindrical anchorage *b* extends laterally from each side of the fitting, the axes of the anchorages being in alignment, and there is a radially projecting shoulder or flange *c* at the inner end of each anchorage. Fitting over the inner part of each anchorage is a metal bush *d* which is a push-on fit on the anchorage and is keyed against angular movement relative to the anchorage by a rib *e* pressed in the bush and engaging in a keyway *f* in the anchorage. A rubber sleeve *g* of substantial radial thickness fits over and is bonded to the bush *d* and fits within and is bonded to a concentric outer metal bush *h*. The inner bush *d* is clamped against the shoulder *c* by a nut *j* screwed on to the anchorage outside the bush. The outer end of the bush *d* preferably projects slightly beyond the rubber sleeve so that the nut *j* engages the bush only and is clear of the outer end of the sleeve.

A divided arm *k* of which the two parts are adjustably secured together by studs *l* has at one end an annular lug *m* of such a diameter as to receive the outer bush *h* on which it is tightly clamped, and at the

other end the arm has a similar but smaller lug *n* in which the handle-bars *p* are adapted to be clamped. Thus the arms *k* can be adjusted angularly relative to the outer bushes to vary the height of the handle-bars, and the handle-bars can also be adjusted angularly relative to the arms.

The shoulder *c* at the inner end of each spindle *b* on the steering head is preferably elliptical with its major axis horizontal. The length of the minor axis is less than the diameter of the outer bush, as shown in Figure 3, and the major axis is equal to or slightly greater than the diameter of the bush as shown in Figure 1 so that in steering movements of the handle-bars the inner edge of the bush can engage with the shoulder at the front and rear to transmit the steering movement positively to the head but the area of contact is not sufficient to interfere with the angular movement of the handle-bars in a vertical direction under road shocks.

Having now particularly described and ascertained the nature of our said invention, and in what manner the same is to be performed, we declare that what we claim is:—

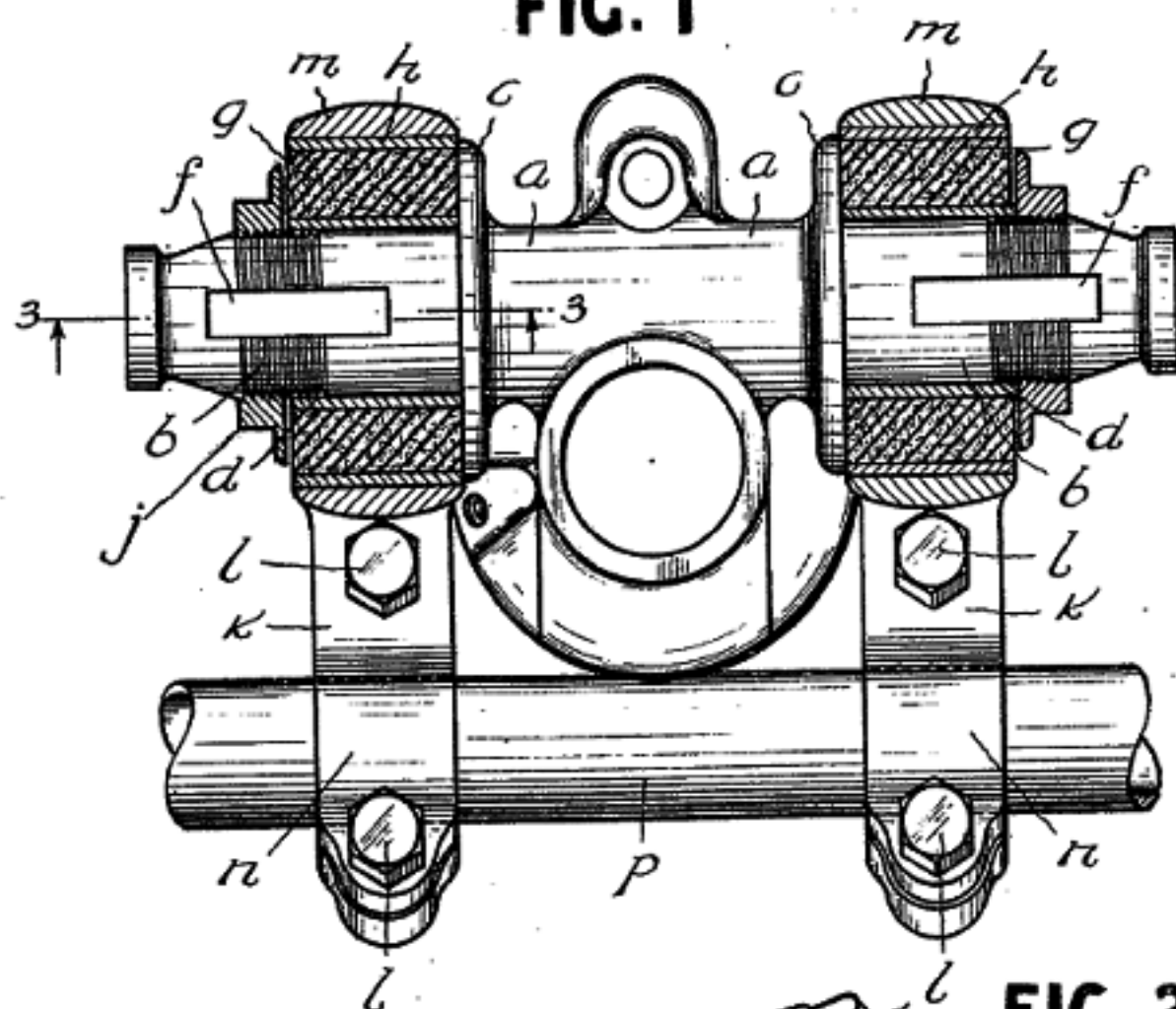
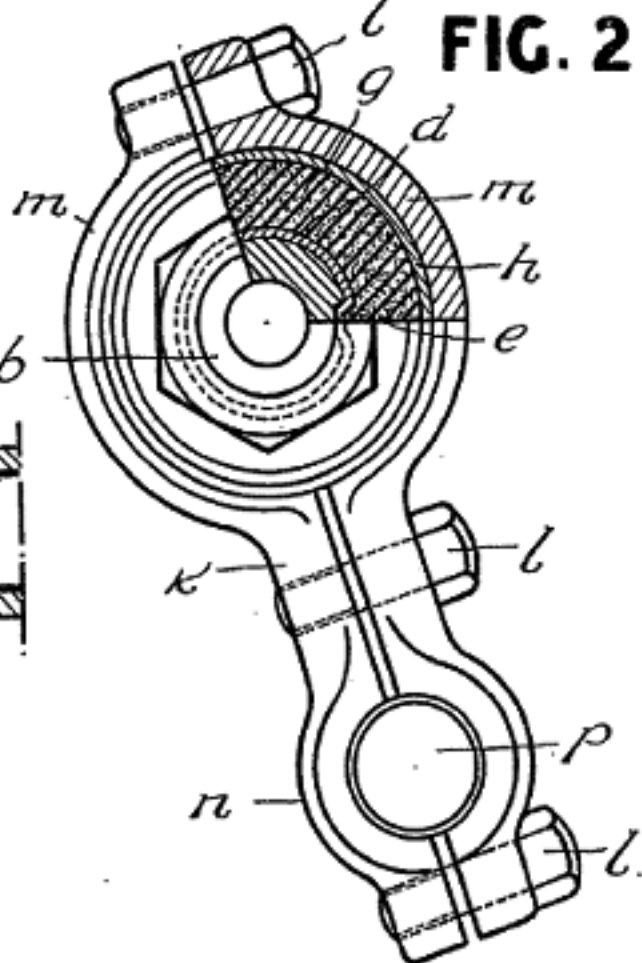
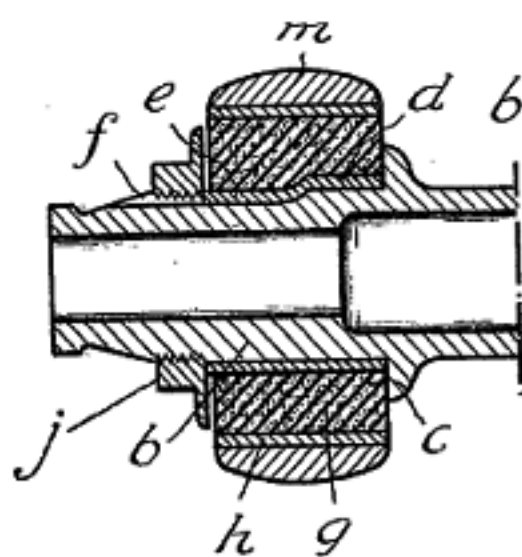
1. A handle-bar mounting for a cycle, motor-cycle or the like in which the handle-bars are mounted in a pair of substantially horizontal spaced arms mounted on the steering head by means of rubber sleeves bonded to inner and outer tubular bushes of which the inner bushes are keyed against angular movement relative to the steering head while the outer bushes are clamped in split lugs or the like incorporated with the arms.

2. A handle-bar mounting as claimed in Claim 1 in which the inner bushes fit over and are keyed against angular movement relative to opposed cylindrical anchorages extending laterally from a fitting forming part of the steering head of the machine.

3. A handle-bar mounting as claimed in Claim 2 in which the assembly formed by the rubber sleeve and the inner and outer bushes is clamped in an axial direction against a shoulder at the inner end of the anchorage and the shoulder is of elliptical outline with its major axis horizontal and substantially equal to or greater than the diameter of the outer bush.

4. A handle-bar mounting for cycles, motor-cycles and the like substantially as described with reference to the accompanying drawings.

Dated the 27th day of June, 1940.  
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**FIG. 1****FIG. 2****FIG. 3**

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