

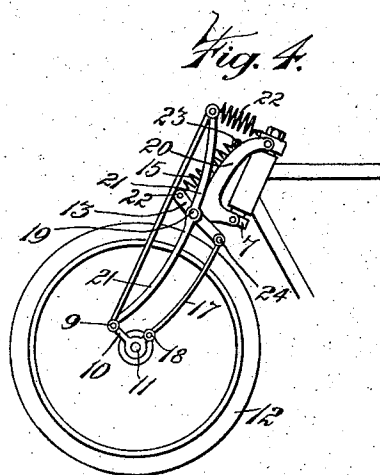
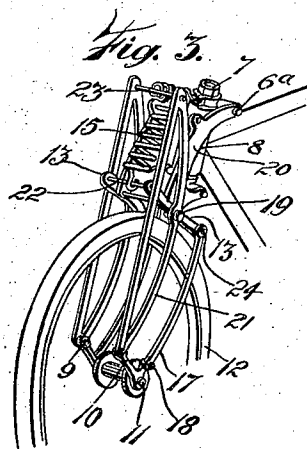
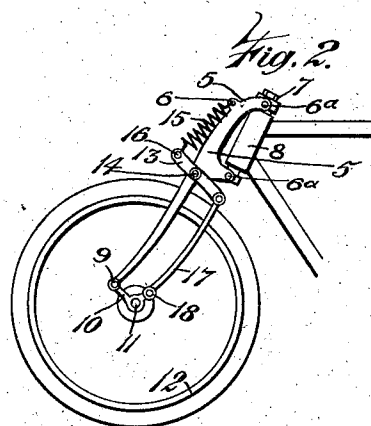
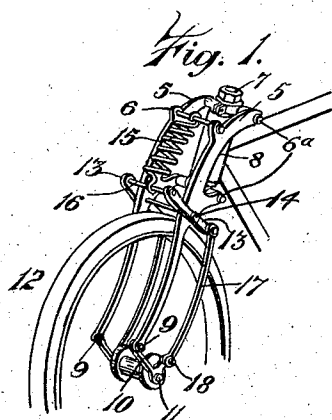
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1,485,935

J. P. MacLEAN

SPRING FORK FOR MOTOR CYCLES AND OTHER CYCLES

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UNITED STATES PATENT OFFICE.

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SPRING FORK FOR MOTOR CYCLES AND OTHER CYCLES.

Application filed October 8, 1921. Serial No. 506,461.

To all whom it may concern:

Be it known that I, JOHN PERCY MACLEAN, a subject of the King of Great Britain and Ireland, residing at 245 Dawson Street, Newcastle, in the State of New South Wales, Commonwealth of Australia, have invented new and useful Improvements in Spring Forks for Motor Cycles and Other Cycles, of which the following is a specification.

This invention relates to forks for cycles, motor cycles and the like, the object being to so mount the head of the machine that shocks due to inaccuracies in the road will be absorbed in such a manner as to give a wave like motion to the machine rather than a succession of sharp up and down movements. This result is obtained by means of a pair of levers one end of each of which is spring controlled, the other ends being connected by rods to the rear member of the bell crank levers which are secured upon the spindle on each side of the front wheel. These levers are pivoted, preferably at a point below the lower extremity of the steering column, to the side frames forming the fork; the upper end of the fork is rigidly secured to the steering column while the lower ends are pivotally secured to the forward member of the bell crank levers, which are secured upon the spindle on each side of the front wheel. The principle involved in this invention may be applied in various forms but it has been considered sufficient to describe and illustrate it in its simplest form with one modification. In its simplest form a shock to the front wheel will cause the wheel to rise vertically while in the modification the movement may be partly vertical and partly horizontal.

In order to fully describe and ascertain my invention and the manner in which it is to be performed a more detailed description will now be given and reference will be made to the accompanying sheet of drawings in which:—

Fig. 1 is a perspective view of the appliance mounted in position upon the front portion of a motor or other cycle.

Fig. 2 is a side elevation of Fig. 1.

Fig. 3 is a perspective view of a modification of Fig. 1 and

Fig. 4 is a side elevation of Fig. 3.

In Figs. 1 and 2 the fork is formed by two side frames 5 rigidly secured together by means of the bolts and nuts 6 and 6^a or in

any other suitable manner. The bolts and nuts 6^a pass through the steering column 7 above and below the crown 8 thus rigidly securing the fork 5 to the head of the machine. The extremities of the lower ends of the fork 5 are pivotally secured at 9 to the forward member of the bell cranks 10. The bell cranks 10 are rigidly secured one on each side to the spindle 11 of the wheel 12. Levers 13 are pivoted at 14 upon the side members of the fork 5 at a point preferably at or below the lower extremity of the steering column 7. The forward ends of these levers 13 are secured to and controlled by a helical spring 15 the lower end of the spring being threaded through or otherwise secured to a bolt 16 which passes through and is suitably secured to the forward ends of levers 13. The upper end of the spring 15 may be secured, in the same manner as the lower end, to the bolt 6 passing through the fork 5. The rear ends of the levers 13 are pivotally secured to the upper ends of connecting links or rods 17 the lower ends of which are pivoted at 18 to the rear or trailing members of the bell cranks 10.

Referring now to Figs. 3 and 4 the fork is made in two distinct parts, the upper portion being similar in construction to the upper part of the fork 5 illustrated in Figs. 1 and 2 but the lower members or prongs 21 are bow shaped and are articulated at 19 to the upper part 21 that point being preferably adjacent to or below the lower end of the steering column 7. The upper ends of the bow shaped members 21 of the fork are connected by means of a spring 22 to the steering column 7. The lower extremities of these bow shaped members 21 are pivotally connected at 9 to the forward ends of the bell crank levers 10 while the bell crank levers 10 are connected, one on each side, to the spindle of the wheel 12. In this case the levers 13 and the bow shaped members 21 may have a common point of articulation to the upper part of the fork 20. The forward ends of the levers 13 are connected to the lower end of the spring 15, by means of the bolt and nut 22, the upper ends of the spring 15 being secured to the fork 20 by means of the bolt and nut 23.

The rear ends of the levers 13 are pivotally connected at 24 to the upper ends of the connecting rods 17, the lower ends of the

connecting rods 17 being pivotally connected at 18 to the trailing or rear members of the bell crank levers 10.

I claim:—

5 1. In a device of the character described in combination with a crown column of the frame of a cycle and bell crank levers swingably mounted on the ends of the axle of the front wheel of the cycle, of a fork
10 turnably connected to the crown column and having the lower portion pivotally connected with the forward arms of the bell crank levers, other levers fulcrumed to the upper
15 portion of the fork, a yielding connection between the upper ends of the last mentioned levers and the upper portion of the fork, operable connections between the lower portion of said last mentioned levers and trailing
20 portions of the bell crank levers and approximately parallel with the main lower portions of the fork, substantially as and for the purposes set forth.

2. In a motor or other cycle the combination with the crown column of the frame, of
25 a fork including an upper portion and a lower portion pivoted to the upper portion, the upper portion being turnably connected to the crown column, bell crank levers pivoted about the ends of the axle of the
30 front wheel of the cycle, the lower portion of the fork being pivotally connected to the forward arms of the bell crank levers, other

levers fulcrumed about the pivot points of the portions of the fork, a resilient connection between the upper portions of the last
35 mentioned levers and the extreme upper portion of the fork, and operable connections between the lower ends of the last mentioned levers and trailing arms of the bell crank levers, substantially as and for the purposes
40 set forth.

3. In motors and other cycles, the combination with the crown column of the frame, of a fork including an upper portion turnably connected to the crown column and a
45 lower portion pivotally connected to the upper portion, bell crank levers pivotally mounted on the axle of the front wheel of the cycle, other levers fulcrumed about the pivotal connections between the fork portions,
50 a spring member interposed between the upper ends of the last mentioned levers and the extreme upper portion of the fork, the lower portion of the fork being pivotally connected with the forward arms of the bell
55 crank levers, and links operably arranged between the lower portions of the last mentioned levers and the trailing portions of the bell crank levers, substantially as and for the purposes set forth.

60 In testimony whereof I have signed my name to this specification.

JOHN PERCY MacLEAN.