

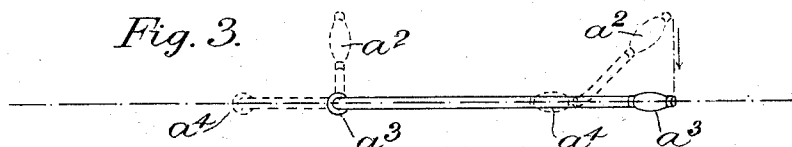
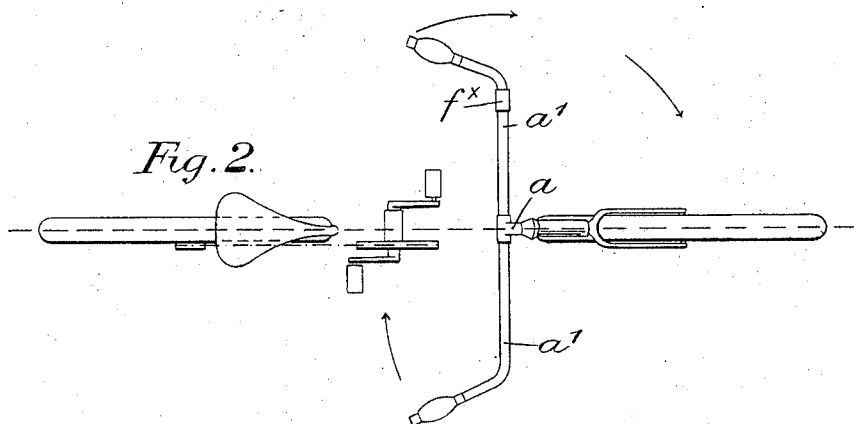
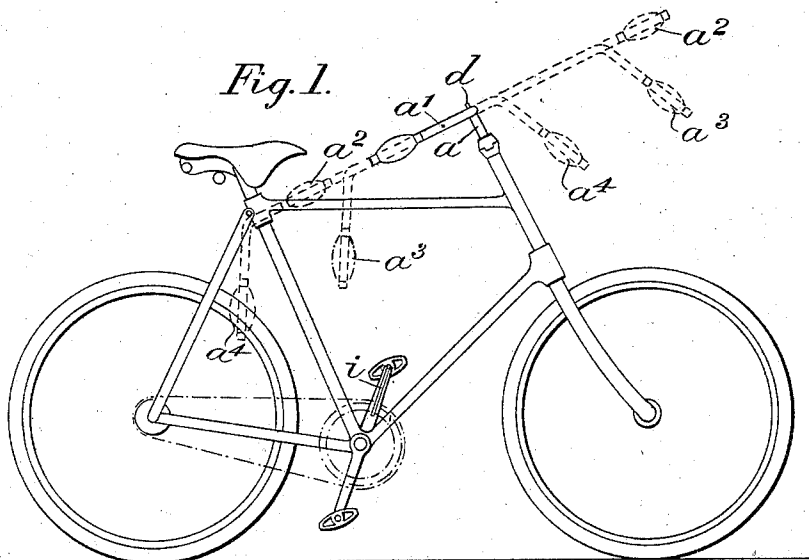
(No Model.)

3 Sheets—Sheet 1.

J. E. EVERED & D. G. PAPPA.
VELOCIPED OR MOTOR CYCLE.

No. 576,439.

Patented Feb. 2, 1897.



Witnesses
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Atty.

(No Model.)

3 Sheets—Sheet 2.

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Fig. 1^a

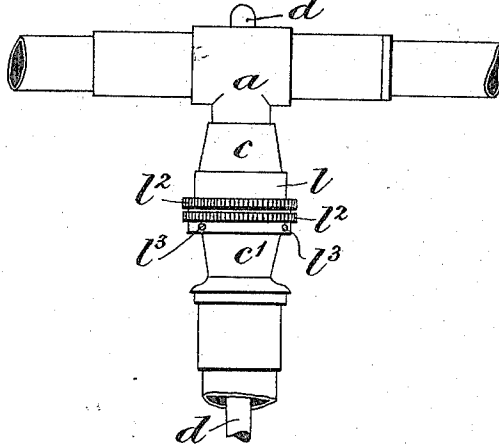
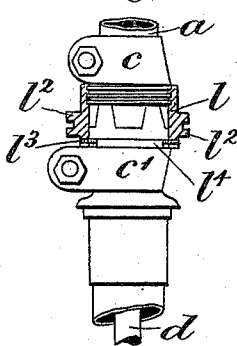
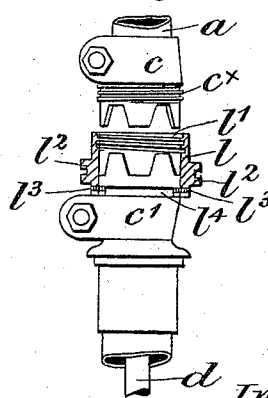


Fig. 2^a



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Fig. 3^a



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(No Model.)

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Fig. 4.

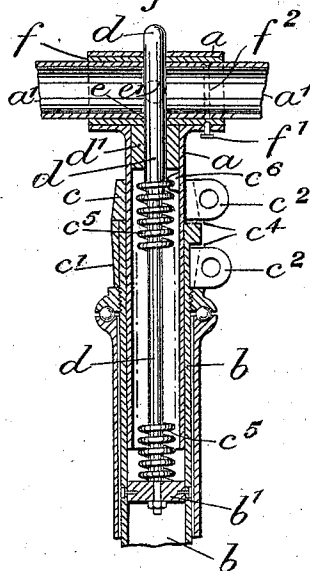


Fig. 5.

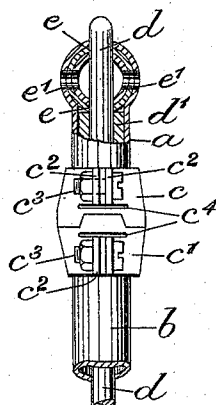


Fig. 6.

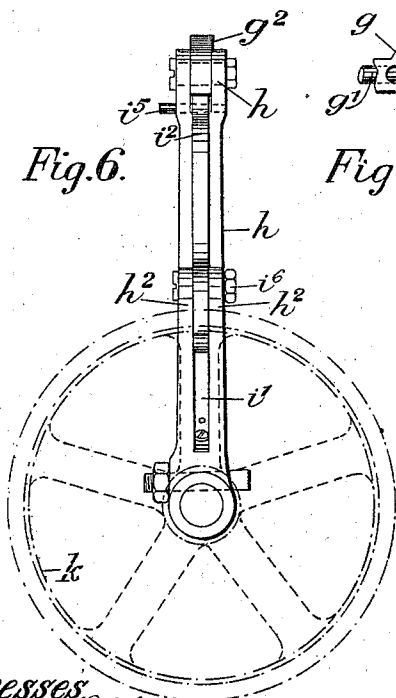


Fig. 7.

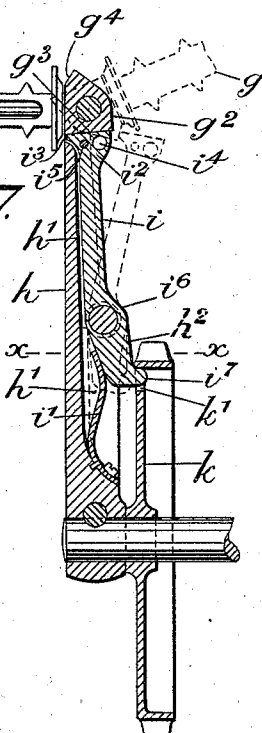


Fig. 8.

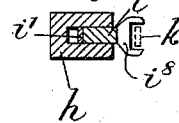
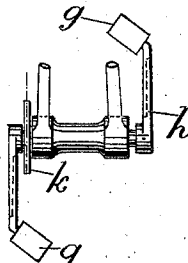


Fig. 9.



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UNITED STATES PATENT OFFICE.

JOHN ELWIN EVERED AND DEMOSTHENES GEORGE PAPPA, OF LONDON,
ENGLAND.

VELOCIPEDE OR MOTOR-CYCLE.

SPECIFICATION forming part of Letters Patent No. 576,439, dated February 2, 1897.

Application filed July 27, 1896. Serial No. 600,688. (No model.)

To all whom it may concern:

Be it known that we, JOHN ELWIN EVERED, a subject of the Queen of Great Britain and Ireland, and DEMOSTHENES GEORGE PAPPA, a subject of the King of Greece, residing in London, England, have invented certain new and useful Improvements in Velocipedes or Motor-Cycles, of which the following is a specification.

10 This invention relates to improved means whereby the handle-bar and the pedals of velocipedes and motor-cycles can be brought into such positions that the machine shall take up less room than usual when not in use. A further object is to provide improved means for transmitting the driving power from the cranks to the driving chain-wheel and for enabling the cranks to be thrown out of action when required.

20 For the purposes of our invention we fit the handle-bar to the steering-head in such a way that it can be turned to lie parallel with the wheels, and can also be rotated round its own axis to enable the handles to be turned down. It may also be so arranged that it can be moved or slid backward when so turned with an endwise or longitudinal movement. These various movements insure that the handles shall neither project laterally from the machine nor yet above it to any appreciable extent. We also arrange that the pedals can be turned back to lie inside the cranks and can be locked in this position, as well as in their working position. We also arrange the chain-wheel loosely on its axle and provide a movable connection between it and the crank adjacent to it, whereby the driving power is transmitted to the said wheel near the rim thereof instead of through the axle, and whereby also the cranks can be thrown out of gear when desired.

Our invention will be readily understood on reference to the accompanying drawings, in which—

45 Figure 1 is a side elevation, and Fig. 2 a plan, of a bicycle, with certain parts omitted for sake of clearness, having our improvements applied thereto. Fig. 3 is a detached view showing the handle-bar in plan in the several positions mentioned. Fig. 1^a is a front

view, Fig. 2^a a side view, partly in section, and Fig. 3^a a corresponding view, showing the means we adopt to prevent any unintentional disengagement of the clutch when riding over rough roads or otherwise. In Fig. 2^a the parts are shown engaged, while in Fig. 3^a they are shown disengaged. Fig. 4 is a vertical section, and Fig. 5 a side view, to a larger scale, partly in section, of the steering-head and handle-bar. Fig. 6 is a side view, and Fig. 7 60 a longitudinal section, showing, also to a larger scale, the arrangement for turning back the pedals and for transmitting the driving power to the chain-wheel. Fig. 8 is a section on the line *xx* of Fig. 7, showing a slight 65 modification of the movable connection between the crank and chain-wheel. Fig. 9 shows, diagrammatically, the pedals turned inward out of the way.

In carrying out our invention we connect 70 the T-piece *a* of the handle-bar *a'* with the steering-post *b* by means of a spring-clutch, whose movable part *c* is secured to the stem of the T-piece, while its fixed part *c'* is secured to the said steering-post. These parts *c* *c'* 75 have slightly-tapering teeth or projections which engage with each other. They are provided with lugs *c*², through which pass tightening-bolts *c*³, and contraction under the action of the bolts is allowed for by slots *c*⁴ near the lugs. The clutch can be disconnected by pulling the handle-bar, and with it the T-piece, slightly upward, thereby setting these free and allowing the handle-bar to be turned 80 in the direction of the arrows, Fig. 2, into the desired position parallel to the wheels, as indicated at *a*², Figs. 1 and 3. The parts of the clutch are normally kept together by a spiral spring *c*⁵, extending from a projection *c*⁶ in the T-piece to a cross-piece *b'* in the steering-post, and a pin or rod *d*, secured to this cross-piece, passes up through the spring and through a steadying-block *d'* in the T-piece, this block being, however, free to turn relatively to the stem. The upper extremity of 85 the rod projects through one or other of two pairs of holes *e e'*, formed in the handle-bar, and suitable means, such as a spring-catch or a cotter-pin, may be provided at the upper end of the rod for locking it and the T-piece to- 90 100

gether, so as to prevent the handle-bar being accidentally raised and disengaged by the pull of the rider, as when ascending inclines.

When the handle-bar is raised, as before mentioned, to disengage the clutch, the said holes clear the pin or rod d , and the handle-bar can be rotated round its own axis to turn the handles down from the position a^2 , Figs. 1 and 3, in which they project laterally into the positions a^3 , in which they are vertical or practically so. The position of the holes is such that the pin or rod enters one pair of them, namely, e , when the handles are in their ordinary position, and the other pair e' when the handles are turned down.

The endwise or longitudinal movement of the handle-bar by which it may be brought into the position a^4 , Figs. 1 and 3, is provided for by the method of fitting the same in the tubular cross portion or collar of the T-piece. This collar is of larger diameter than the handle-bar to enable it to pass the bends of the said bar, and a bush or sleeve f is secured on the center part of the handle-bar to fit the T-piece firmly. A spring-pin or other suitable movable stop f' is fitted in the T-piece and engages a groove f^2 in the bush or sleeve to normally lock the handle-bar against endwise or longitudinal movement. When, however, the pin or stop f' is disengaged, the handle-bar can be pushed back endwise through the tubular portion or collar, say, up to the bend in the said bar, and at this point a second bush or sleeve f^x , corresponding to that above mentioned, Fig. 2, is advantageously provided on the handle-bar to enter the T-piece and form a secure fitting therein.

l is a ring having on its interior a screw-thread l' and on its exterior two milled portions l^2 to facilitate screwing up or down. This ring is held in place by screws l^3 , which project into an annular groove l^4 in the fixed part c' of the clutch, so that said ring is free to turn, but cannot move up or down. The movable part c has a screw-thread c^x , adapted to engage the internal screw-thread l' . Thus it will be seen on reference to Fig. 2^a that it is impossible to disengage the parts of the clutch by a simple pull, it being necessary both to pull the handle-bar upward, and with it the movable part c' , and at the same time to unscrew the ring l . In a similar way in order to engage the clutch it is necessary to screw the ring l so that it draws the screw part c^x into it. It will of course be understood that no actual downward pressure is necessary in this case, as the spring c^5 constantly tends to bring the parts of the clutch into engagement. With this arrangement it is unnecessary for the pin or rod d to project through the T-piece of the handle-bar.

If an ordinary brake be used, its lever and connections are arranged so that they do not interfere with the movements of the handle-bar, but we find it advantageous to use a pneumatic brake, as the flexible connecting-tube of the same obviously requires no special

adaptation in applying it to our improved cycle.

The pedals g are hinged or pivoted in order to enable them to be turned inward, for which purpose their pins or spindles g' have enlarged bosses g^2 , mounted in the forked extremities of the cranks h . Locking-levers i , acted upon by springs i' , tending to keep them in the working position, are arranged in grooves or recesses h' in the inner sides of the cranks and serve to keep the pedals firmly in both their operative and inoperative positions. The end of each locking-lever carries a wedge or other suitably-shaped head i^2 , which abuts against an inclined face g^3 on the boss g^2 of the pivoted pedal-pin, and so locks it in its working position. The wedge-shaped head has also a flattened point or nose i^3 , which bears against a corresponding flat portion g^4 on the pedal-pin boss g^2 when the pedal is turned back into its inoperative position, as indicated in dotted lines in Fig. 7 and in full lines in Fig. 9, so holding the said pedal steady in such position. In the back of the head i^2 of the locking-lever a hole i^4 is formed for the insertion of an instrument to force back the locking-lever when it is desired to turn the pedal from one position to the other.

A removable spring (or catch) i^5 may also be provided to rigidly connect the wedge-shaped head and the crank, and so better retain the head in the working position, and the pin may be tapered to enable it to make up for wear of the parts.

The fulcrum i^6 of the locking-levers are carried by lugs h^2 on the cranks, as shown. The short arm of that lever next the driving chain-wheel k has a nose or projection i^7 , adapted to enter an aperture h' in one of the spokes of the said wheel, or in a plate secured to two of the spokes, and forms the movable connection before mentioned between the crank and chain-wheel, the parts being so arranged that when the locking-lever is holding the pedal in its working position, as indicated in full lines in Fig. 7, the nose or projection i^7 is engaging the said wheel, while when in its inoperative position the said nose or projection is clear of the wheel. The latter is mounted loose on the crank-axle instead of being keyed thereto, as is usual, and there is therefore no rigid connection between the said wheel and the crank when the pedals are not in use. This is of advantage, for example, when the machine is being pushed forward or propelled by mechanical power, as the wheels can turn and yet the cranks can remain at rest. Moreover, by transmitting the power to the chain-wheel, near the rim thereof, a much more efficient driving action is obtained, and vibration is greatly diminished.

Obviously instead of the short arm of the locking-lever having a nose or projection it may be forked, as indicated at i^8 , Fig. 8, so as to clip or embrace one of the spokes (indicated in dotted lines) of the chain-wheel. This construction is more especially applica-

ble to chain-wheels whose spokes are too thin to admit of a hole, such as *k'*, Fig. 7, being formed therein.

Having now described our invention, what we claim, and desire to secure by Letters Patent, is—

1. A velocipede, or motor-cycle, provided with means for turning its handle-bar so as to cause it to lie lengthwise of the machine with the handles in a vertical or nearly vertical position and for enabling it to be pushed back through the T-piece, together with means for turning the pedals inward to cause them to be out of the way, and for disengaging them from the chain-wheel, substantially as described.

2. In a velocipede, or motor-cycle, the combination of a handle-bar rotatably mounted in a T-piece, a clutch, one part of which is secured to said T-piece, and the other part to the steering-post of the front wheel, a spring for holding the parts of said clutch in engagement and means for preventing rotation of said handle-bar relatively to the T-piece, while said clutch is in engagement, substantially as described.

3. In a velocipede, or motor-cycle, the combination of a handle-bar, a T-piece carrying the same, a spring-clutch for engaging said T-piece with the steering-post of the front wheel, a fixed rod or pin secured in said steering-post and engaging in holes in said handle-bar, means for locking the rod and T-piece together, and means for permitting endwise movement of said handle-bar through the collar of said T-piece, substantially as described.

4. In a velocipede, or motor-cycle, the combination of a handle-bar, a T-piece carrying the same, a spring-clutch connection between said T-piece and the steering-post of the front wheel, means for locking said handle-bar against rotation while the clutch is in engagement, a sleeve on said handle-bar fitting in said T-piece, and a pin-and-groove detachable connection between said T-piece and sleeve, substantially as described.

5. In a velocipede, or motor-cycle, the combination of a handle-bar, a T-piece carrying the same, a spring-clutch for engaging said T-piece with the steering-post of the front

wheel, a fixed rod or pin secured on said steering-post and engaging holes in said handle-bar, an internally-screw-threaded ring in rotary connection with the movable part of the clutch and adapted to engage a screw-thread on the fixed part of said clutch, substantially as described.

6. In a velocipede, or motor-cycle, the combination of a pedal-crank, a pedal hinged or pivoted to said crank, a chain-wheel mounted loose on the axle of such pedal-crank, and a locking-lever pivoted on the crank and serving both to lock the pedal, and also to form a movable connection between the crank and chain-wheel, substantially as described.

7. In a velocipede, or motor-cycle, the combination of a pedal-crank, a pivoted pedal, a chain-wheel mounted loose on the axle of such pedal-crank, a locking-lever in a groove or recess on the inner side of said crank, adapted to engage said wheel near the rim thereof, and a boss on the pedal pin or spindle to engage said locking-lever and prevent the pedals turning under the strain of pedaling, substantially as described.

8. In a velocipede, or motor-cycle, the combination of a pedal-crank having a forked extremity, a pedal having its pin or spindle pivotally mounted in said forked extremity, a pivoted locking-lever carried by said crank, and a spring acting on said locking-lever and tending to keep it in the working position, substantially as described.

9. In a velocipede, or motor-cycle, the combination of a pedal-crank having a forked extremity, a pedal having its pin or spindle pivotally mounted in said forked extremity, a pivoted locking-lever carried by said crank, a spring acting on said locking-lever and tending to keep it in the working position, and a removable spring-pin for securing it in such working position, substantially as described.

In witness whereof we have hereunto signed our names in the presence of two subscribing witnesses.

JOHN ELWIN EVERED.
DEMOSTHENES GEORGE PAPPAS.

Witnesses:

H. ASHLEY-NORRIS,
F. C. HARRIS.