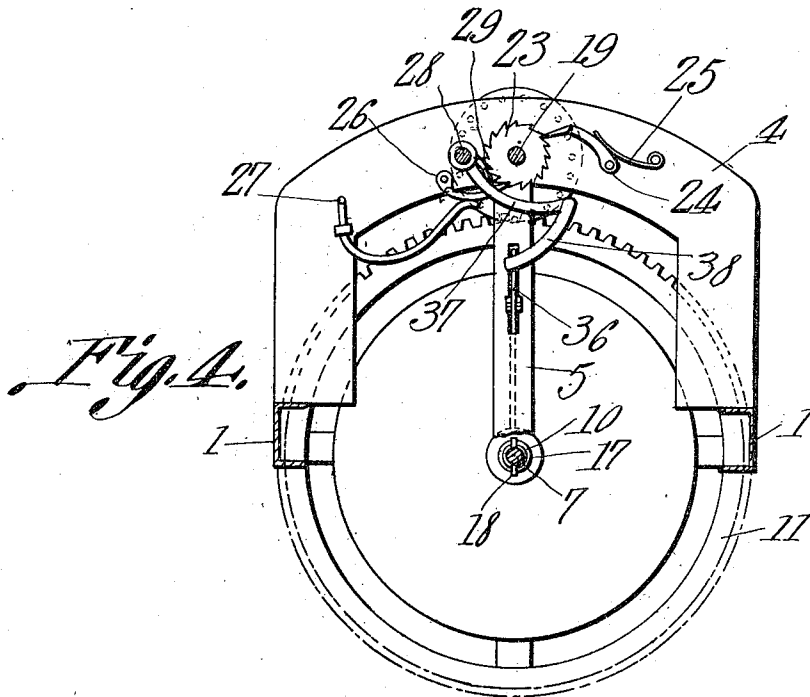
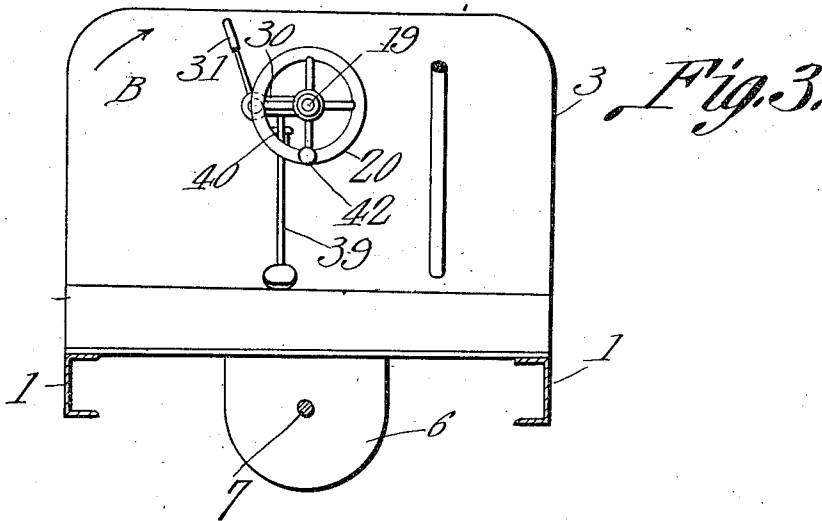


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ATTACHMENT FOR AUTOMOBILES.
APPLICATION FILED MAY 17, 1910.

981,914.

Patented Jan. 17, 1911.

2 SHEETS-SHEET 2.



Witnesses

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ATTACHMENT FOR AUTOMOBILES.

981,914.

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To all whom it may concern:

Be it known that I, HOUSTON M. CARROLL, a citizen of the United States, residing at San Antonio, in the county of Bexar and State of Texas, have invented a new and useful Attachment for Automobiles, of which the following is a specification.

It is the object of this invention to provide a simple and inexpensive structure, adapted to be mounted upon automobiles and other motor propelled vehicles, the device being so constructed that a spring motor may be employed for giving initial movement to the shaft of the engine whereby the vehicle is propelled.

Another object of the invention is to provide a novel means for putting the spring motor under tension, to provide novel means for operatively connecting the spring motor with the engine shaft, and to provide novel means for releasing the spring motor, so that it may operate upon the engine shaft to give an initial movement to the same.

The drawings show typical embodiments merely, and it is to be understood that changes, properly falling within the scope of what is claimed, may be made without departing from the spirit of the invention.

In the accompanying drawings,—Figure 1 shows the invention in side elevation, parts being broken away and sectioned; Fig. 2 is a top plan, parts being removed; Fig. 3 is an end elevation; and Fig. 4 is a vertical transverse section upon the line A—B of Fig. 1.

In the drawings, that end of the structure to which the letter A is applied, obviously is the front end, and the terms "front," "rear" and the like will be selected accordingly.

The support in which the device is housed, is, in the present instance, shown in the form of a vehicle frame 1. Fixed to and rising from the vehicle frame 1, is a front plate 2, and a rear plate 3, spaced apart. The frame 1 carries, between the plates 2 and 3, an intermediate plate 4, the outline of which is seen most clearly in Fig. 4 of the drawings. It will there be seen that this intermediate plate 4 is U-shaped in general outline, there being an arm 5 depending vertically from the intermediate, upper portion of the plate 4. The engine 6 is supported

within the frame 1 in any common and well known manner, the engine shaft being denoted by the numeral 7, and the fly-wheel thereof by the numeral 8. The engine and the spring motor for imparting an initial movement to the crank of the engine, are housed beneath a hood 9, the construction being common and well known.

Journaled for rotation at its forward end in the front plate 2, is an auxiliary shaft 10, the rear end of which incloses, and is rotatable upon, the forward end of the engine shaft 7. Fixed to the auxiliary shaft 10, is a pinion 11. The auxiliary shaft 10 is actuated by a spiral spring 12, one end of which is secured at 14 to the shaft 10, the other end of the spring being secured to the front plate 2, as shown at 15. If desired, the spring 12 may be housed within a suitable case 16.

Operating upon the auxiliary shaft 10 is a clutch 17, adapted, when slid rearwardly, to interlock with a transverse pin 18, or with a similar element adapted to a like end, located upon the engine shaft 7. Disposed above the shafts 7 and 10, and journaled for rotation in the plates 3 and 4, is a winding shaft 19, the rear end of which protrudes through the plate 3, the protruding end of the shaft 19 being provided with a suitable operating wheel 20, or the like, whereby the shaft 19 may be rotated. Secured to the forward end of the winding shaft 19, and located between the plates 2 and 4, is a pinion 21, in mesh with the pinion 11, and of considerably less diameter than the last named pinion. This pinion 21 is, as seen in Fig. 1, so constructed that when the winding shaft 19 is moved rearwardly, the said pinion 21 may be drawn rearwardly with the shaft 19, out of engagement with the pinion 11. A compression spring 22 surrounds the winding shaft 19, the spring 22 bearing at its rear end upon the plate 4, and at its forward end against the pinion 21, the spring 22 obviously acting to hold the pinion 21 normally in mesh with the pinion 11.

Secured to the winding shaft 19, to the rear of the plate 4, is a ratchet 23, adapted to engage a pawl 24, pivotally mounted upon the plate 4 and actuated by a spring 25. It will be seen that this ratchet 23, en-

gaging the plate 4, serves to limit the forward movement of the shaft 19 under the action of the spring 22.

The pawl and ratchet mechanism 23, 24, constitutes the primary means for preventing the winding shaft 19 from rotating under the action of the spring 12 of the motor. A secondary means for holding the winding shaft against rotation is provided for additional security. This secondary holding means consists of a pawl 26, pivoted upon the plate 4; and adapted to engage the ratchet 23, adjacent the lowermost portion thereof. The pawl 26 is held normally in engagement with the ratchet 23, by means of a spring 27, secured at one end to the plate 4, and at the other end bearing against the pawl 26.

Slidably and rotatably mounted in the plates 3 and 4, and located to one side of the winding shaft 19, is a shaft 28, adapted to operate the clutch 17, the shaft 28 being hereinafter referred to as the clutch operating shaft. The clutch operating shaft 28 carries a finger 29, adapted to bear against the lower pawl 26, to move the same out of engagement with the ratchet 23, when the shaft 28 is rotated as hereinafter described. One end of the shaft 28 protrudes rearwardly through the plate 3, and upon the protruding ends of the shafts 28 and 19, is mounted a connection 30, in which the winding shaft 19 is readily rotatable. In this connection 30 is, as seen most clearly in Fig. 2, a transverse slot 32. Through this slot 32 extends a lever 31, the same being operatively connected with the clutch shaft 28. This lever 31 serves at once, as a means for operating the shaft 28, and as a means for retaining the rear end of the shaft 28 within the connection 30, so that the said shaft 28 may have a limited rotary movement within the connection. Secured to the forward face of the plate 3, is a spring 33, the forward end of which engages beneath a projection 34 upon the clutch shaft 28.

Any suitable means for connecting the clutch shaft 28 operatively with the clutch 17, may be employed. In the present instance, a lever 36 is extended through the arm 5 of the intermediate plate 4, and fulcrumed, intermediate its ends thereupon, as shown at 35. Secured to the clutch shaft 28, is an arm 37, provided at its lower end with a transverse, arcuate head 38, adapted to bear against the upper end of the lever 36, the lower end of the lever 36 being adapted, as seen most clearly in Fig. 1, to bear against the clutch 17, to slide the same rearwardly to engage the engine shaft 7.

Fulcrumed at 40, upon the plate 3, is a depending foot lever 39, the upper end of which engages the connection 30, between the rearwardly protruding ends of the shafts 28 and 19. Protruding rearwardly from the

plate 3, is a stop pin 41, adapted to be engaged by the lever 31, when the same is moved transversely of the vehicle.

The operation of the device is as follows. Presupposing that the parts are in the positions shown in Fig. 1 of the drawings, the handle 42 of the operating wheel 20 is seized, the winding shaft 19 being rotated. The pinion 21, fixed upon the forward end of the winding shaft 19, will engage the pinion 11, fixed upon the auxiliary shaft 10, rotating the auxiliary shaft 10, and putting the spring 12 under tension. During this operation, the clutch 17 is out of engagement with the engine shaft 7. The pawls 24 and 26, engaging the ratchet 23, will prevent the winding shaft 19 from rotating under the action of the spring 12. When the spring 12 is thus put under tension, the device is operative, at the will of the operator, to impart initial movement to the engine shaft 7. When it is desired to start the rotation of the engine shaft 7, the lever 31 is moved in the direction of the arrow B of Fig. 3, until it bears against the stop pin 41, which will indicate that the clutch 17 is properly connected with the engine shaft 7. It may be that when the lever 31 is moved in the direction of the arrow B, the lever may not come into contact with the stop pin 41, this fact resulting from the relative positions of the clutch 17 and the pin 18 upon the engine shaft 7. In such instance, pressure upon the lever 31 may be applied with one hand, the operating wheel 20 being rotated through a small arc, with the other hand. This rotation of the operating wheel 20 will so position the clutch 17 with respect to the engine shaft 7, that the lever 31 may be brought into contact with the stop pin 41, thus indicating that the clutch is properly connected with the engine shaft. The manner in which the lever 31 operates to move the clutch 17 rearwardly, is as follows: Obviously, when the lever 31 is moved in the direction of the arrow B of Fig. 3, the shaft 28 will be rotated through a small arc, in the same direction. This movement of the shaft 28 will cause the arm 37 to tilt, the curved head 38 bearing against the upper end of the lever 36, and causing the upper end of the lever to tilt forwardly, the lower end of the lever being tilted rearwardly, to engage the clutch 17, the clutch being thus slid rearwardly to engage with the engine shaft 7. After the clutch 17 has thus been slid to engage the engine shaft 7, the lever 31 may be moved back to its original position, in the direction opposite to that indicated by the arrow B in Fig. 1. When it is desired to actuate the engine shaft 7, the lower end of the foot lever 39 may be pressed forwardly, the upper end of the foot lever engaging the connection 30, between the shafts 19 and 28, sliding the said shafts rearwardly, and

drawing the pinion 21 out of mesh with the pinion 11. Thus the pinion 11, together with the shaft 10, will be free to rotate under the action of the spring 12, the spring 12 thus acting, upon the will of the operator, to impart an initial movement to the engine shaft 7.

It has been pointed out hereinbefore, that the lever 31 may be moved manually in a direction opposite to the arrow B of Fig. 3. However, this manipulation of the lever is not necessary. For, if desired, the shaft 28 may be provided with the projection 34, which, being engaged by the spring 33, will rotate the shaft 28, so that the upper end of the lever 31 is normally spaced apart from the stop pin 41.

When it is desired to operate the winding shaft 19 as hereinbefore described, to put the spring 12 under tension, the operator may throw the upper end of the lever 31 in the direction of the arrow B to a slight extent, rotating the shaft 28, and causing the finger 29 thereof to engage the pawl 26, holding the said pawl 26 out of engagement with the ratchet 23. In such instance, the winding shaft 19 is held by the pawl 24, alone, the additional friction imposed by the pawl 26 being thus removed, during the operation of putting the spring 12 under tension.

Having thus described the invention, what is claimed is:—

1. In a device of the class described, a support; an auxiliary shaft journaled therein; a spring motor for operating the auxiliary shaft; a clutch adapted to connect the auxiliary shaft with an engine shaft; a winding shaft slidable and rotatably mounted in the support; intermeshing pinions upon the winding shaft and the auxiliary shaft, the pinions being out of engagement when the winding shaft is slid in one direction; resilient means for sliding the winding shaft to hold the pinions in engagement; and a device upon the winding shaft for holding the same against rotation under the action of the motor, the said device being engageable by the support to limit the sliding of the winding shaft under the action of the resilient means.

2. In a device of the class described, a support; an auxiliary shaft journaled therein; a spring motor for operating the auxiliary shaft; a clutch adapted to connect the auxiliary shaft with an engine shaft; a winding shaft slidable and rotatable in the support; interacting elements upon the auxiliary shaft and the winding shaft to put the spring motor under tension when the winding shaft is rotated, the winding shaft being slidable to break the engagement between said elements; means for holding the winding shaft against rotation when the said elements are in engagement; a shaft jour-

naled for rotation in the support substantially parallel with the winding shaft; and means for connecting the said shaft with the clutch to operate the same.

3. In a device of the class described, a support; an auxiliary shaft journaled therein; a spring motor for operating the auxiliary shaft; a clutch adapted to connect the auxiliary shaft with an engine shaft; a winding shaft slidable and rotatable in the support; interacting elements upon the auxiliary shaft and the winding shaft to put the spring motor under tension when the winding shaft is rotated, the winding shaft being slidable to break the engagement between said elements; independent primary and secondary means for holding the winding shaft against rotation when the said elements are in engagement; a shaft rotatable in the support to operate the clutch; and means upon said shaft to render the secondary holding means inoperative when the said shaft is rotated.

4. In a device of the class described, a support; an auxiliary shaft journaled therein; a spring motor for operating the auxiliary shaft; a clutch adapted to connect the auxiliary shaft with an engine shaft; a winding shaft slidable and rotatable in the support; interacting elements upon the auxiliary shaft and the winding shaft to put the spring motor under tension when the winding shaft is rotated, the winding shaft being slidable to break the engagement between said elements; means for holding the winding shaft against rotation when the said elements are in engagement; a shaft journaled for rotation in the support and provided with means to operate the clutch when the said shaft is rotated; a connection in which the clutch operating shaft and the winding shaft are rotatably mounted; and means engaging the connection to slide the shafts.

5. In a device of the class described, a support; an auxiliary shaft journaled therein; a spring motor for operating the auxiliary shaft; a clutch adapted to connect the auxiliary shaft with an engine shaft; a winding shaft slidable and rotatable in the support; interacting elements upon the auxiliary shaft and the winding shaft to put the spring motor under tension when the winding shaft is rotated, the winding shaft being slidable to break the engagement between said elements; means for holding the winding shaft against rotation when said elements are in engagement; a shaft slidable and rotatably mounted in the support; means for connecting the last named shaft with the clutch to operate the same; a connection in which the clutch operating shaft and the winding shaft are rotatable; a lever for rotating the clutch operating shaft, the said lever being in engagement with the connec-

tion to hold the same upon the clutch operating shaft; and means, in engagement with the connection, for sliding both the winding shaft and the clutch operating shaft.

6. In a device of the class described, a support; an auxiliary shaft journaled therein; a spring motor for operating the auxiliary shaft; a clutch adapted to connect the auxiliary shaft with an engine shaft; a winding shaft slidable and rotatable in the support; interacting elements upon the auxiliary shaft and the winding shaft to put the spring motor under tension when the winding shaft is rotated, the winding shaft being slidable to break the engagement between said elements; and releasable means for holding the winding shaft against rotation.

7. In a device of the class described, a support; an auxiliary shaft journaled therein; a spring motor for operating the auxiliary

shaft; a clutch adapted to connect the auxiliary shaft with an engine shaft; a winding shaft slidable and rotatable in the support; interacting elements upon the auxiliary shaft and the winding shaft to put the spring motor under tension when the winding shaft is rotated, the winding shaft being slidable to break the engagement between said elements; releasable means for holding the winding shaft against rotation; and a shaft rotatable in the support and operatively connected with the clutch and operable to release said means.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

HOUSTON M. CARROLL.

Witnesses:

HERMAN M. CARROLL,
C. W. WALKER.