Nov. 18, 1930. P. A. GIANERA 1,782,035

FOOT THROTTLE

Filed July 2, 1928

FIG. 1.

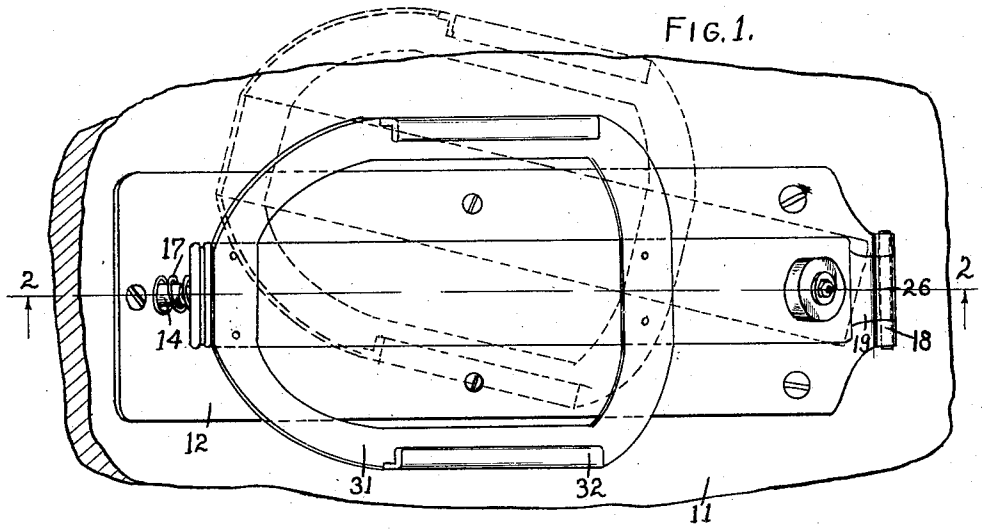


FIG. 2.

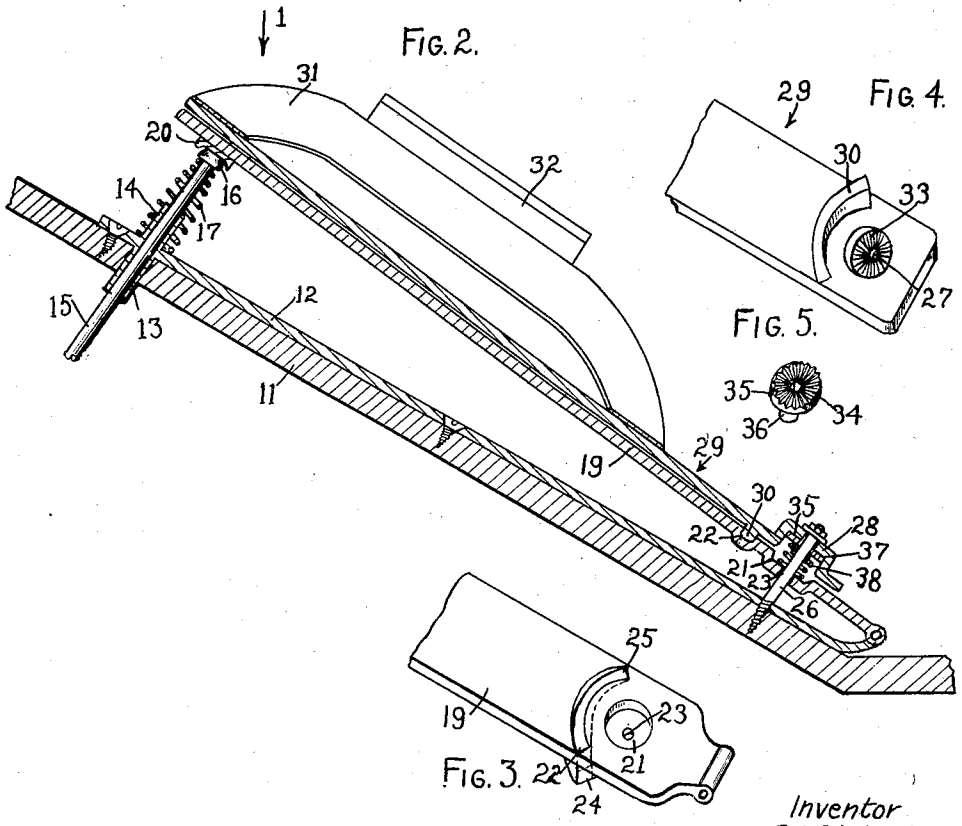


FIG. 4.

FIG. 5.

FIG. 3.

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FOOT THROTTLE

Application filed July 2, 1928. Serial No. 289,995.

My invention is a foot throttle particularly adapted for automobiles, to control the internal combustion engine.

An object of my invention is the construction of a foot throttle which may be positioned on the inclined portion of the driver's compartment of an automobile, and in which the throttle may be controlled by a straight pressure movement downwardly of the foot or the throttle may be controlled by turning the foot slightly to one side, the movement in one direction opening the throttle and in the reverse movement closing the throttle.

Another object of my invention is a foot throttle in which the pedal for actuating the throttle by a direct downward movement of the foot is interconnected with the pedal shifted laterally by the foot and thereby controlling the throttle so that without shifting the foot that the throttle may be operated either by a straight downward pressure or a lateral pivoting movement of the foot.

Another object of my invention in connection with the lateral foot movement control is a retaining device holding the foot throttle in the position to which it has been moved.

In constructing my invention I utilize the usual throttle stem or rod which extends upwardly through the floor of the vehicle. This rod is engaged at its upper end by a pivoted under pedal which pedal operates by a direct upward and downward movement of the foot thrusting the rod downwardly and allowing its return by spring action. Mounted on the under pedal there is an upper pedal having a lateral swinging movement in reference to the under pedal, and by a cam construction when the upper pedal is swung to one side the lower pedal is depressed thus opening the throttle; and on the reverse movement the under pedal rises due to the spring reaction closing the throttle.

I also employ interconnecting ratchets to hold the upper pedal in the shifted position if desired.

My invention is illustrated in the accompanying drawings, in which:

Fig. 1 is a plan view of my invention taken in the direction of the arrow 1 of Fig. 2,

Fig. 2 is a longitudinal section taken on the line 2—2 of Fig. 1 in the direction of the arrows,

Fig. 3 is a detail perspective view of the upper side of a portion of the under pedal,

Fig. 4 is a perspective view of the under side of a portion of the upper pedal,

Fig. 5 is a perspective view of a sliding ratchet.

In the construction the floor of the driver's compartment is indicated by the numeral 11 having a plate 12 mounted thereon. There is a sleeve 13 extending through the floor and if desired this may be continued upwardly above the plate as indicated at 14. The throttle rod or stem 15 slides in this sleeve and has a head or button 16 on the top against which the spring 17 presses. These features may be standard if desired.

The end of the plate is provided with a hinge 18 to which is hingedly connected the under pedal 19. This pedal is in the form of a strap and has a plate 20 on the outer end engaging the head 16 of the throttle rod. This strap is provided with a circular recess 21 and with an arcuate depression 22 which is cam shaped and concentric with the perforation 23 through the depression 21. This arcuate depression has its greatest depth on one side as indicated at 24 and terminates on the opposite side 25 substantially flush with the strap.

A pin 26 is secured to the floor boards or threaded in the plate 12 and extends through the perforation 23. This pin passes through a perforation 27 in an upwardly pressed recess 28 in an upper pedal 29 made in the form of an elongated strap. This strap is provided with an arcuate cam 30 concentric to the perforation 27, the cam fitting in the arcuate depression 22 of the under pedal. The upper pedal is provided with a foot plate 31 having inturned flanges 32 to engage the edges of the sole of the operator's shoe.

The inner surface of the recess 28 is provided with ratchet teeth 33 which engage the friction teeth 34 on the head 35 of a plunger 36 which is slidable on a squared section 37 of the pin 26, being pressed upwardly by a spring 38 which engages underneath the

head 35 and is seated in the recess 21 of the lower pedal.

The friction teeth 34 are arranged in a radial manner extending outwardly from the center. These teeth are so constructed as to interengage and by the spring tend to prevent turning motion in either direction. However when side pressure in either direction is utilized on the upper pedal, it causes the teeth of the friction device to slip from one notch to the other; the movable device 34 causing the compression of the spring 38 in this action and the spring together with the friction device are sufficient to hold the upper pedal when it is moved transversely to the lower pedal.

The manner of operation and functioning of my invention is substantially as follows: When the operator depresses the pedals, pressing on the foot plate 31, both the upper and the lower pedals move together, swiveling on the hinge 18 which causes a depression of the throttle rod 15 much in the ordinary manner, and when the foot is lifted the spring 17 returns the pedals to their normal position.

If, however, instead of depressing the foot the operator shifts or twists the foot sideways as indicated by the full and dotted line positions of Fig. 1, the cam 30 on the upper pedal co-acting with the arcuate depressed cam 22 causes the lower pedal to be thrust downwardly while the upper pedal thrusts to one side, this upper pedal swiveling on the upper end of the pin 26. This action, therefore, causes the depression of the throttle rod 15 opening the throttle of the engine.

In this swiveling or pivoting movement the ratchet head 35 is held stationary on account of being mounted on the squared section of the pin 26 and as this is pressed upwardly against the ratchet teeth 33 in the recess 28 the upper pedal is maintained in the shifted position even after the foot is removed from the foot plate. This action allows opening of the throttle by the foot and leaving the throttle in such open position after the foot is removed. In order to close the throttle it is necessary in this instance to reinsert the foot on the foot plate and shift the foot from the dotted to the full line position of Fig. 1 without depressing the foot. Such action on the reverse movement of the cams allows the under pedal to rise, being acted upon by the pressure of the spring 17.

Various changes may be made in the principles of my invention without departing from the spirit thereof, as set forth in the description, drawings and claims.

I claim:

1. A foot throttle having in combination a movable under pedal with means connected therewith to actuate a throttle, an upper pedal mounted thereon to move in a direction transverse to that of the under pedal, and means actuated by the upper pedal to operate the lower pedal to actuate the throttle.

2. A foot throttle, a first pedal having means to operate a throttle rod by a movement in one direction, a second pedal having a movement in the same direction as the first pedal and also at an angle thereto, and means co-operating between the pedals on the angular movement to operate the first pedal and hence the throttle rod.

3. A foot throttle comprising in combination a slidable throttle rod, a pivoted under pedal connected therewith to operate the throttle by an angular movement of the under pedal in one direction, an upper pedal mounted on the under pedal having an angular movement in a direction substantially at right angles to that of the first pedal, and a co-operative means between the under and the upper pedals to actuate the under pedal on the said angular movement of the upper pedal.

4. A foot throttle having an under pedal pivotally mounted at one end and having means engaging the other end to operate a throttle, an upper pedal mounted on a pivot extending through the under pedal and at right angles to the pivotal connection of the under pedal, and co-operating cams on said pedals to operate the under pedal on a lateral movement of the upper pedal.

5. A foot throttle as claimed in claim 4, an interconnecting device between the said pedals to retain the upper pedal in the laterally shifted position.

6. A foot throttle having an under pedal pivotally connected to a floor board at one end, a slidable throttle rod engaging the other end of said pedal, a pin extending upwardly from the floor board and through a perforation in the under pedal, an upper pedal pivotally mounted on the pin, and interengaging cams on the said pedals to depress the under pedal on a lateral movement of the upper pedal.

7. A foot throttle as claimed in claim 6, a friction means mounted on the upper pedal, a second friction means slidable but non-rotatable on the said pin engaging therewith, and means to retain said ratchets in engagement.

8. A foot throttle comprising in combination a plate adaptably mounted on a vehicle floor and having an under pedal pivotally connected thereto, a slidable throttle rod engaging the under pedal, a pin connected to the said plate and extending through a perforation in the under pedal, an upper pedal pivotally mounted on the said pin, interengaging cams between the said pedals to depress the under pedal on a lateral movement of the upper pedal, a throttle controlling device operated by the movement of the under pedal, said pedals having complementary

sockets having a friction means, a complementary second friction means slidable on a pin but nonrotatable thereon, and a spring thrusting on said latter friction means.

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

P. A. GIANERA.