

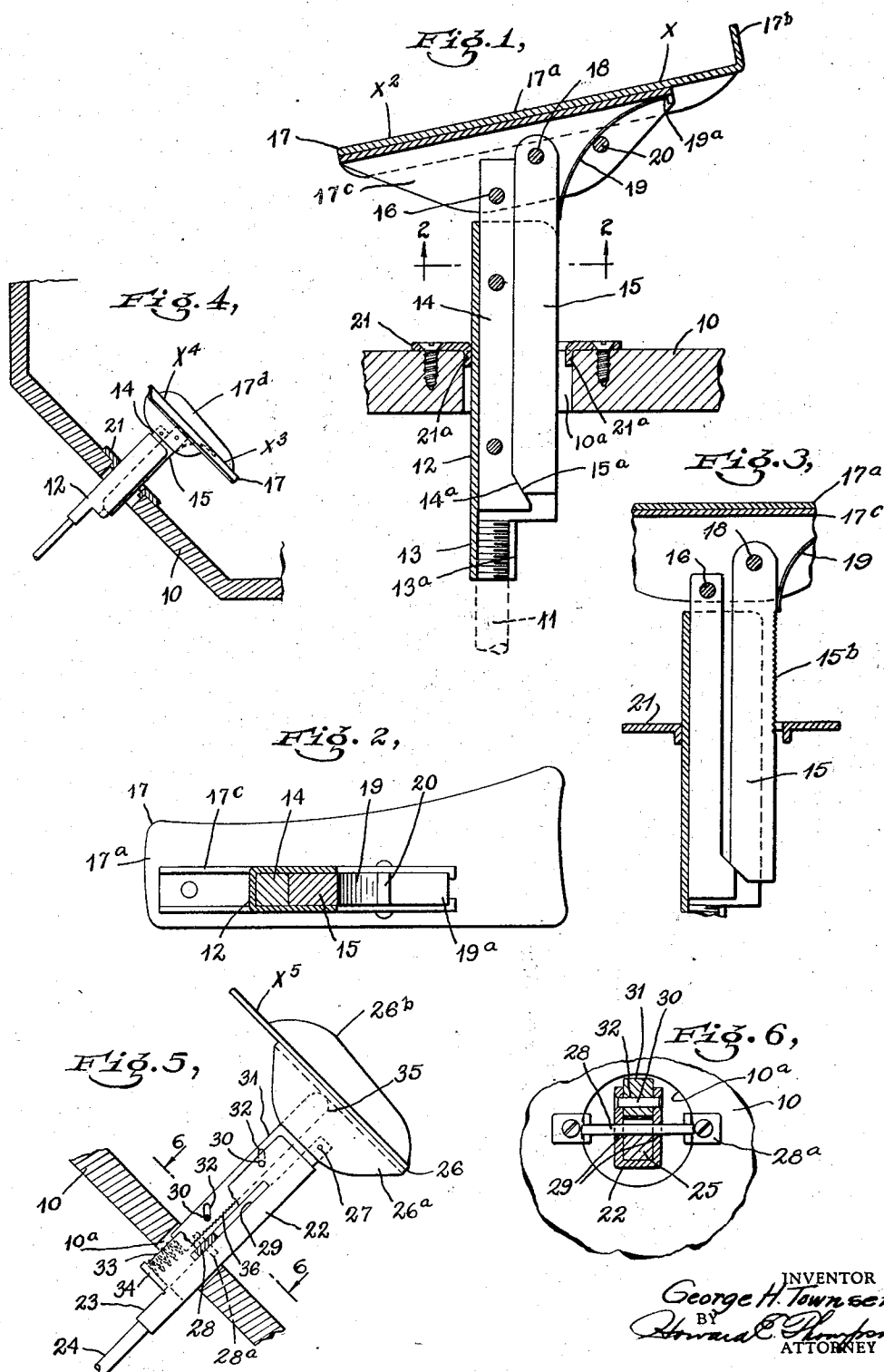
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G. H. TOWNSEND

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ACCELERATOR

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INVENTOR
George H. Townsend
BY
Howard C. Thompson
ATTORNEY

UNITED STATES PATENT OFFICE

GEORGE H. TOWNSEND, OF FLUSHING, NEW YORK

ACCELERATOR

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This invention relates to accelerators and particularly to devices of this class for use in connection with motor vehicles for actuating the throttle valve of the carburetor to control the engine speed; and the object of the invention is to provide an accelerator of the class described with means for locking or retaining the same in different positions of adjustment or operation to maintain a constant and unfluctuating engine speed especially in operating a vehicle over uneven roadways or highways and to provide a device of this class which may be readily released from its locked or fixed position and moved into a different position in the operation of the vehicle; a still further object being to provide a device of the class specified, which is so constructed as to form a natural foot rest portion as an integral part of the accelerator structure, and whereby the weight of the foot alone and without the need of exerting pressure on said foot rest portion will be sufficient to maintain the accelerator in the desired position of adjustment, the desired result being accomplished by rocking the foot receiving part of the device sidewise or forwardly and backwardly depending upon the particular character of accelerator employed; and with these and other objects in view, the invention consists in a device of the class and for the purpose specified, which is simple in construction, efficient in use, and which is constructed as hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which:

Fig. 1 is a transverse, sectional view of one form of accelerator which I employ.

Fig. 2 is a section on the line 2—2 of Fig. 1.

Fig. 3 is a view of a part of the construction shown in Fig. 1 with parts in a different position and showing a slight modification.

Fig. 4 is a sectional view of the foot board of a motor vehicle showing a modified form of accelerator mounted in connection therewith.

Fig. 5 is a view similar to Fig. 4 but showing another modification; and,

Fig. 6 is a section on the line 6—6 of Fig. 5.

In Figs. 1, 4 and 5 of the drawings, 10 represents a suitable frame or flooring which may constitute the floorboard of a motor vehicle. In Figs. 1 and 2 of the drawings, I have shown one form of my improved accelerator which may constitute the structure of the accelerator pedal or be coupled with a rod as indicated at 11, which in turn is in operative connection with the butterfly valve of a carburetor not shown, but well known in the art. My improved device as shown in said figures consists of a substantially U-shaped body portion 12 provided at its lower end with an internally threaded sleeve 13 formed by bending the side walls inwardly into tubular form, the adjacent edges of said walls being separated by a supply which is indicated at 13a by the non-section portion of said sleeve.

A bar 14 is riveted or otherwise secured within the body 12 and is provided at its lower end and within the channel of said body with an outwardly extending cam face 14a in connection with which a similar cam face 15a on an arm 15 is adapted to operate. The bar 14 projects above the top of the body 12, and pivoted thereto as seen at 16 is a foot piece 17, the latter consisting of a foot rest part 17a having a projecting rod 17b at the right hand side thereof as seen in Fig. 1 and a U-shaped bearing portion 17c riveted, welded or otherwise secured to the under face of the portion 17a and into the channel in which the upper end of the bar 14 is located.

The arm 15 is mounted within the channel of the part 17c and is pivoted thereto at a point above the pivot 16 as seen at 18. A flat spring 19 is seated or retained in connection with one end of the part 17c as at 19a and passes over a pin 20 in the part 17c, and the free end engages the arm 15 and normally serves to support the arm in the position shown in Fig. 1 of the drawings, under the comparatively light tension of said spring, the arm 15 constituting what might be termed a lock arm or member. A plate 21 is secured

to the support 10, adjacent an aperture 10a formed therein, through which the accelerator device is freely movable in the operation thereof. The plate 21 is somewhat in the form of an escutcheon plate and is provided on opposite side walls with depending members 21a which give surface thereto, and in connection with which the back member of the body 12 and one face of the arm 15 is adapted to operate in clamping or locking the device in different positions of adjustment.

In accelerator devices as now in common use, it has been customary to employ on the footboard of the vehicle, a foot rest arranged adjacent the accelerator button or pedal so that the rocking of the toe portion of the foot from right to left with the right hand side of the foot upon the rest would permit of the proper operation or acceleration of the engine of the vehicle. With my construction as shown in Fig. 1 of the drawings, the side of the foot rest 17a, designated at x, namely that to the right of the pivot 16, will be regarded as the foot rest or supporting portion of the device, whereas the other side designated at x2 and at the left of the pivot 16 will constitute a pedal actuating portion of the device. In other words, by applying downward pressure with the foot bearing to the left upon x2, the accelerator may freely move upwardly and downwardly through the aperture 10a to accelerate the engine of the vehicle; and at any stage of operation or movement of the pedal, by simply resting the foot on the portion x of the device, the weight of the foot on the said designated side will cause the same to move downwardly, thus advancing the lock arm 15 laterally as indicated in Fig. 3 of the drawing to move the same into engagement with the walls 21a of the plate 21 to securely lock and retain the device in the desired position of adjustment. By providing suitable beveled surfaces 14a and 15a of the parts 14 and 15, compensating for the movement of the pivot 18 relatively to the pivot 16 the outer or bearing surface of the arm 15 may move downwardly in parallel relation with reference to the longitudinal plane of the body 12 or the back wall of said body to provide for the engagement of the accelerator with the plate 21 in the same degree of movement of the arm 15 in any adjusted position thereof within the range of adjustment required for the proper operation and acceleration of the engine of the vehicle.

From the foregoing, it will be apparent that a vehicle may be operated and maintained at a constant speed by allowing the foot to rest upon the portion x of the foot piece 17a and may be readily shifted to other speeds by tilting the foot in the direction of the portion x2 and allowing the accelerator to move upwardly or to move the same downwardly. In all devices of this kind, the accelerator is held in its uppermost position by a spring

and is lowered against the tension of such spring, but the spring and other mechanisms are not shown in that they are well known to everyone in the art.

In Fig. 3 of the drawings, the outer surface of the arm 15 where it cooperates with the plate 21 is provided with a roughened surface 15b which may be desirable to insure a more positive grip or locking of the device, and retaining the device in predetermined positions of adjustment. Any suitable means may be employed for the accomplishment of this result, such as frictional surfaces, but it has been found in practice that plain surfaces with the cam or wedge action provided by the structure disclosed is sufficient to accomplish the desired result, and permits of the finest degrees of adjustment in a freely functioning manner.

In Fig. 4 of the drawings, I have shown a slight modification wherein the foot piece 17 is arranged at right angles to the position shown in Fig. 1 of the drawings and a lip portion 17d is arranged at the long side rather than at the short side thereof as in Fig. 1. With this construction, the foot piece is actuated by what may be termed a heel and toe movement of the foot; that is to say, in order to lock the device or to move the arm 15 outwardly, the part x3 is depressed by the weight of the foot as applied thereto, whereas in operating the accelerator, the toe of the foot is simply pressed downwardly on the portion x4. Otherwise, the structure and operation of the device shown in Fig. 4, is the same as that shown in Figs. 1 to 3 inclusive.

In Figs. 5 and 6, I have shown another modification wherein a body 22 substantially similar to the body 12 is employed, the body 22 having an internally threaded sleeve 23 with which the accelerator rod 24 is employed. The cross sectional form of the body 22 is U-shaped and a bar 25 is secured within and to said body and projects at the upper end thereof and is mounted within a U-shaped part 26a of a foot piece 26, and is pivoted to said part as seen at 27. The foot piece 26 is actuated in the same manner as the foot piece 17 in Fig. 4 of the drawings and is provided at one side with an upwardly extending lip 26b similar to the lip 17d.

With this construction, the body 22 is movable through the aperture 10a in the support 10, and mounted in connection with said support is a cross bar 28 which transverses the central portion or axis of the aperture 10a, and the free end of which is retained in a keeper 28a. This bar passes through elongated apertures 29 in the side walls of the body 22 and serves to key said body in its movement upwardly and downwardly through the aperture 10a in the acceleration operation.

Mounted on two rivets, bolts or the like secured to the body 22 is a lock bar 31, said

rivets or bolts passing through and operating in angularly disposed elongated apertures 32 in order to permit the movement of the bar 31 toward and from the cross bar 28 in the operation of locking the device in different positions of adjustment. The bar and forward end of the foot pedal 26 is held in raised position by a coil spring 33 engaging the lower surface of said bar 31, and supported on a seat 34 at the lower end of the member 22. The upper end of the bar is rounded as seen at 35 and engages the under surface of the pedal 26 so that when the forward end 25 of the pedal is slightly depressed, the bar 31 will be moved downwardly and lowered inwardly to engage and frictionally or otherwise clamp the cross bar 28 to retain the device in the desired position of adjustment. In the construction, the inner surface of the bar 31, where it engages the bar 28, is preferably roughened as seen at 36.

While the device shown in Fig. 5 is operated reversely to the structure shown in Fig. 4, that is to say, the toe is moved downwardly to lock the device, it will be understood that by simply inverting the parts, the same movement may be employed as in Fig. 4 to produce the desired operation. At the same time, by arranging the parts at right angles to the structure shown in Fig. 5, a lateral movement of the foot piece as in Fig. 1 may accomplish the desired result of retaining the accelerator in different positions of adjustment.

It will also be understood that while I have shown a few forms of construction for carrying my invention into effect, that I am not necessarily limited to the structure shown and described, nor am I necessarily limited to any specific use of the broad principle of my invention, as the same may be employed for locking a plunger-like member of any kind or class in different positions of adjustment wherever it is desired to accomplish this result, and various other changes in and modifications of the construction herein shown and described may be made within the scope of the appended claims, without departing from the spirit of my invention or sacrificing its advantages.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. An accelerator of the class described comprising a plunger body, a fixed support in connection with which the plunger is movably mounted, a foot piece pivotally supported in connection with the upper end of said plunger, a lock member movably supported in connection with said plunger and in operative connection with said foot piece at one side of the pivotal mounting thereof so that the weight or slight pressure of the foot on said side of the pedal will cause said member to be moved into position to lock said plunger against movement relatively

to the stationary support in the different positions of adjustment of said movement relatively to said support, tensional means for normally supporting said lock member in inoperative position, means for moving said lock member relatively to the plunger in a plane parallel to the longitudinal plane of the plunger, and said lock member having an irregular gripping surface adapted to engage the stationary support.

2. An attachment for accelerator rods of the class described comprising a U-shaped body, means for coupling the accelerator rod with said body, a foot pedal pivotally supported in connection with the upper end of said body and having portions extending at opposite sides thereof, a lock member extending longitudinally of and arranged within said U-shaped body and in operative connection with one extending side of said foot pedal whereby the depression of said side of the pedal will actuate said member, and means for guiding said member to permit of its movement in a plane parallel to the longitudinal plane of said body.

3. An attachment for accelerator rods of the class described comprising a U-shaped body, means for coupling the accelerator rod with said body, a foot pedal pivotally supported in connection with the upper end of said body and having portions extending at opposite sides thereof, a lock member extending longitudinally of and arranged within said U-shaped body and in operative connection with one extending side of said foot pedal whereby the depression of said side of the pedal will actuate said member, means for guiding said member to permit of its movement in a plane parallel to the longitudinal plane of said body, and tensional means for normally supporting said member in predetermined position.

4. An attachment for accelerator rods of the class described comprising a U-shaped body, means for coupling the accelerator rod with said body, a foot pedal pivotally supported in connection with the upper end of said body and having portions extending at opposite sides thereof, a lock member extending longitudinally of and arranged within said U-shaped body and in operative connection with one extending side of said foot pedal whereby the depression of said side of the pedal will actuate said member, means for guiding said member to permit of its movement in a plane parallel to the longitudinal plane of said body, tensional means for normally supporting said member in predetermined position, and a part adapted to be secured to a stationary support and in connection with which said body and member operate.

5. The combination with an accelerator rod of the class described, of a foot pedal pivotally supported in connection with said

- rod and movable on said pivot by the toe and heel action of a foot resting thereon, said rod being actuated by the heel pressure of the foot means cooperating with said pedal for retaining the rod against movement by the application of toe pressure to said pedal, and said last named means involving a lock member pivotally supported in connection with the pedal and arranged on the toe side of the pedal with respect to said rod.
6. A device of the class described comprising a plunger, a lock bar arranged at one side of the plunger, said bar and plunger having cooperating beveled surfaces whereby movement imparted to said bar longitudinally of the plunger will cause the separation of the said bar and plunger, and means for limiting the separation of said parts and for locking the same against movement relative to said means.
7. A device of the class described comprising a plunger, a lock bar arranged at one side of the plunger, said bar and plunger having cooperating beveled surfaces whereby movement imparted to said bar longitudinally of the plunger will cause the separation of said bar and plunger, means for limiting the separation of said parts and for locking the same against movement relative to said means, and a foot pedal pivotally supported in connection with the free end of the plunger, and said bar being pivoted to the foot pedal at one side of said plunger.
8. A device of the class described comprising a plunger, a lock bar arranged at one side of the plunger, said bar and plunger having cooperating beveled surfaces whereby movement imparted to said bar longitudinally of the plunger will cause the separation of said bar and plunger, means for limiting the separation of said parts and for locking the same against movement relative to said means, a foot pedal pivotally supported in connection with the free end of the plunger and said bar being pivoted to the foot pedal at one side of said plunger, and a spring mounted in connection with the foot pedal and cooperating with said bar to normally maintain the same in engagement with said plunger.
9. The combination with an accelerator rod of a device detachably supported in connection with said rod and comprising a plunger rigid with said rod, a foot pedal pivotally supported in connection with said plunger, a support and guide through which the plunger is movable and a lock bar pivotally supported at one side of the plunger and movable therewith and independently thereof, and means whereby said lock bar may be moved laterally with respect to the plunger to engage said support and guide to lock the plunger against movement relatively to said support and guide.
10. In combination, a friction device, an accelerator rod, a foot operated member having operative engagement with said rod and operable to depress the same, a friction member carried by said foot operated member, means causing said friction member to be operated relative to said foot operated member, by rocking of the foot to engage the friction device to lock said foot operated member frictionally against depression, and spring means tending to maintain the friction member in a normal, fixed relation to the foot operated member in which the friction member is ineffective, and acting automatically to restore the friction member to such ineffective position immediately upon release of foot pressure from the foot operated member so that the foot operated member may rise without retardation.
- In testimony that I claim the foregoing as my invention I have signed my name this 8th day of February, 1928.
- GEORGE H. TOWNSEND.